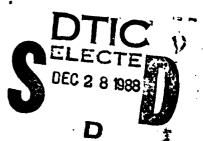
# AD-A203 407 PY

ENVIRONMENTAL STUDIES OF MACROZOOBENTHOS, AQUATIC MACROPHYTES, AND JUVENILE FISHES IN THE ST. CLAIR-DETROIT RIVER SYSTEM, 1983-1984

by

Patrick L. Hudson, Bruce M. Davis, S. Jerrine Nichols, and Cynthia M. Tomcko

Great Lakes Fishery Laboratory U.S. Fish and Wildlife Service 1451 Green Road Ann Arbor, Michigan 48105



February 1986

Final Report

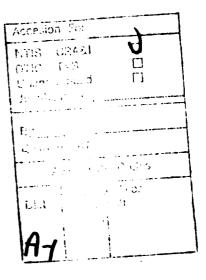
Approved for public released
Distribution Unlimited

| SECURITY CLASSIFICATION OF THIS PAGE                  |                       | ·                           |                      |                      |                                       |
|---|-----------------------|-----------------------------|----------------------|----------------------|---------------------------------------|
| REPORT  | DOCUMENTATIO          | N PAGE                      |                      |                      | rm Approved<br>MB No. 0704-0188       |
| 1a. REPORT SECURITY CLASSIFICATION Unclassified       |                       | 16. RESTRICTIVE             | MARKINGS             |                      |                                       |
| 24. SECURITY CLASSIFICATION AUTHORITY                 |                       | 3. DISTRIBUTION             | /AVAILABILITY OF     | REPORT               |                                       |
| 2b. DECLASSIFICATION / DOWNGRADING SCHED              | JLE                   | Approved                    | for publi            | ic releas            | se:                                   |
|   |                       | distribu                    | tron unlin           | nited                | · · · · · · · · · · · · · · · · · · · |
| 4. PERFORMING ORGANIZATION REPORT NUMB                | ER(S)                 | 5. MONITORING               | ORGANIZATION R       | EPORT NUMBER         | (S)                                   |
| 64. NAME OF PERFORMING ORGANIZATION                   | T6b. OFFICE SYMBOL    | 7a NAME OF M                | ONITORING ORGA       | NIZATION             |                                       |
| Great Lakes Fishery                                   | (If applicable)       |                             |                      |                      |                                       |
| Laboratory  | <u> </u>              |                             | v Corps of           |                      | ers                                   |
| 6c. ADDRESS (City, State, and ZIP Code)               |                       | 1                           | ly, State, and ZIP ( | Code)                |                                       |
| U.S. Fish and Wildlife Se                             | rvice                 |                             | District             |                      |                                       |
| 1451 Green Road Ann Arbor, MI 48105                   |                       | P.O. Box                    | 1027<br>MI 4823      | 1                    |                                       |
| 8a. NAME OF FUNDING/SPONSORING                        | 86. OFFICE SYMBOL     | 9. PROCUREMEN               | INSTRUMENT ID        | NTIFICATION I        | NUMBER                                |
| ORGANIZATION U.S. Army                                | (If applicable)       | NCE-IA-8                    | 3-0004.              | =                    | -                                     |
| Corps of Engineers                                    |                       |                             | 4-0002. NO           | CE-IA-85             | -0001                                 |
| Bc. ADDRESS (City, State, and ZIP Code)               | - <del></del>         |                             | UNDING NUMBER        |                      |                                       |
| Detroit District                                      |                       | PROGRAM<br>ELEMENT NO.      | PROJECT<br>NO.       | TASK<br>NO.          | WORK UNIT<br>ACCESSION NO.            |
| P.O. Box 1027<br>Detroit. MI 48231                    |                       | 1                           | ļ ·                  | j                    |                                       |
| 11. TITLE (Include Security Classification)           |                       | <del></del>                 | <u> </u>             | <del></del>          |                                       |
| Environmental Studies of                              | Macrozoobenth         | os. Aquati                  | c Macrophy           | vtes en              | đ                                     |
| Juvenile Fishes in the St                             | . Clair - Det         | roit River                  | System.              | 1983-1984            | ž                                     |
| 12. PERSONAL AUTHOR(S)                                |                       |                             |                      |                      |                                       |
| Hudson, P. L., B. M. Davis,                           | S.J. Nichols          | . and C.M.                  | Tomcko               |                      |                                       |
| 13a. TYPE OF REPORT 13b. TIME C                       | TO                    | 14. DATE OF REPO            | • • • • •            | Day) 15. PAG         |                                       |
| 16. SUPPLEMENTARY NOTATION                            |                       | Febru                       | ary 1986             |                      | 1238                                  |
|   |                       |                             |                      |                      |                                       |
|   |                       |                             |                      |                      |                                       |
| 17. COSATI CODES                                      | 18. SUBJECT TERMS (   |                             | •                    | • •                  | · ·                                   |
| FIELD GROUP SUB-GROUP                                 |                       | River, Det                  |                      |                      |                                       |
|   | Macrophyte            |                             |                      | Juvenile             | e Fish,                               |
| 19. ABSTRACT (Continue on reverse if necessary        | Winter Nav            |                             | Ce Jama              |                      |                                       |
| This report presents info                             | • •                   | •                           | ndv candus           | ted in 1             | 1983                                  |
| 1984 to describe the dist                             | ribution and          | abundance                   | of macrose           | obentho              | LJOJ ENU<br>L.                        |
| aquatic macrophytes, and                              | juvenile fish         | es in the                   | St. Clair            | - Detro              | it River                              |
| System (SCDRS) during the                             | open water s          | eason, and                  | how they             | might be             |                                       |
| affected by additional wi                             | nter navigati         | on traffic                  | . A furth            | er objec             | ctive of                              |
| this study was to predict                             | or evaluate           | the potent                  | ial enviro           | nmental              | impact                                |
| of an extended navigation                             | season on th          | ese organi                  | sas in the           | SCDRS.               | The                                   |
| information obtained for                              | the open wate         | r season o                  | n the SCDF           | 85 provid            | ies a                                 |
| baseline data set. The s<br>St. Clair River ice jam o | tudy included         | There de                    | ous on the           | errecte              | or the                                |
| other pertinent data to e                             | valuata tha =         | inese da<br>aior effer      | t of any             | osed Bic<br>- cathro | DUE WITH                              |
| of the navigation season.                             |                       | -10. ATTAC                  | - v. any l           | +ngl (               |                                       |
|   |                       |                             |                      |                      | •                                     |
| 20. DISTRIBUTION/AVAILABILITY OF ABSTRACT             |                       | 134 4000000000000           | CHETTY CO ACCUSE     | 7104                 |                                       |
| DUNCLASSIFIEDAMLIMITED SAME AS:                       | RPT. DTIC USERS       | 21. ABSTRACT SE<br>Unclassi | ied                  | ALION                |                                       |
| 220. NAME OF RESPONSIBLE INDIVIDUAL                   | - DIK UJEKS           | 226. TELEPHONE (            |                      | 22c. OFFICE          | SYMBOL                                |
| Thomas Freitag  |                       | (313) 226-                  |                      | CENCE-I              |                                       |
| DD Form 1473, JUN 86                                  | Previous editions are | -Analasa                    | SECHIBITY A          | A ASSESSATION        | OF THIS PAGE                          |

#### **ABSTRACT**

This report provides information needed by the U.S. Army Corps of Engineers for preparation of a Supplemental Environmental Impact Statement addressing the winter operation of the lock facilities at Sault Ste. Marie. Michigan, and the subsequent extension of the navigation season in the St. Clair-Detroit River system (SCDRS) to January-February. We describe the distribution and abundance of macrozoobenthos, aquatic macrophytes and juvenile fishes during the 1983 and 1984 open water season, and attempt to predict or evaluate the potential environmental impact of an extended navigation season on the biota of SCDRS. Fauna and flora were diverse and abundant; we identified more than 300 taxa of macrozoobenthos, 30 taxa of submergent and emergent macrophytes, and 36 species of fish. The diversity and abundance of macrozoobenthos were generally highest in the St. Clair River. Abundance and diversity of submersed macrophytes were similar in the two rivers, but Chara dominated in the St. Clair River and Vallisneria americana in the Detroit River. We collected more total fish in the Detroit River but more species in the St. Clair River. Yellow perch and rock bass dominated most catches in both rivers. An ice jam in the St. Clair River in spring 1984 appeared to affect two of the three groups studied--macroinvertebrates and submersed macrophytes. Of the 24 abundant taxa of macroinvertebrates, 9 were seemingly less abundant in spring in 1984 than in 1983 in the St. Clair River; however the densities of 6 of these taxa had recovered by fall 1984 to levels equal to or exceeding those in fall 1983 and the other 3 were within 30% of those in 1983. Comer of the bottom with submersed macrophytes was somewhat reduced in spring of 1984--particularly in the St. Clair River--but recovered to 1983 levels by fall 1984. Plant biomass levels varied between years and locations; no consistent differences could be attributed to the ice jam. Catches of fish were lower in 1984 than in 1983 but differences between locations and months were inconsistent. Observed differences in the plant community could be attributed to reduced temperatures, and ice-scour may have reduced the density of several taxa of macrozoobenthos. Evaluation of the potential environmental impacts of an extended navigation season on the biota of SCDRS was not attempted.

Kayunds: 500 200 I variations: hipping; marine biology; (KT)





# **EXECUTIVE SUMMARY**

The U.S. Army Corps of Engineers is considering the extension of operation of the Locks at Sault Ste. Marie, Michigan, from 8 January ± 1 week to 31 January ± 2 weeks. This study was undertaken to provide part of the information needed by the Corps for the preparation of a Supplemental Environmental Impact Statement addressing the winter operation of the lock facilities at Sault Ste. Marie, Michigan, and the subsequent extension of the navigation season in the St. Clair-Detroit River system (SCDRS) to mid-winter. The objectives of this study were (1) to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fish that might adversely be affected by an extension of winter navigation and (2) to predict or evaluate the potential environmental impact of an extended navigation season on SCDRS. An extensive ice jam on the St. Clair River in spring 1984 and the associated ice breaking activities provided an opportunity to evaluate between-river and between-year variation in the abundance and distribution of biota relative to differences in ice cover and related shipping activities. The study area encompassed the region between Port Huron (at southern Lake Huron) on the north and the lower end of Grosse Ile (mouth of the Detroit River) on the south, including the St. Clair River, Lake St. Clair, and the Detroit River. The St. Clair River is 39.1 mi long and receives water from Lake Huron; mean annual discharge into Lake St. Clair during the study period was 212,000 ft<sup>3</sup>/s. Lake St. Clair has a surface area of about 430 mi<sup>2</sup>, a mean depth of 11 ft, and a maximum natural depth of 21 ft. Flushing time of the lake is 5 to 7 days. The Detroit River is 31.9 mi long and receives water from Lake St. Clair; and the mean annual discharge rate into Lake Erie was 216,000 ft<sup>3</sup>/s. The shipping channel running through the system has a minimum statutory depth of 27 ft, which is maintained by dredging.

Ice cover is limited or absent from both the St. Clair and Detroit rivers during normal winters, but is usually well developed on Lake St. Clair. However, ice may enter the St. Clair River from Lake Huron mainly under the influence of northerly winds. The current carries the floes downstream until they meet the resistance of the solid ice cover in or upstream from Lake St. Clair. This ice cover increases as more ice enters the system and may extend upstream nearly to Lake Huron. During most of the winter, a large natural ice arch becomes lodged in the narrowing confines at the outlet of Lake Huron and prevents ice from entering the river. This condition usually lasts through the winter but may be disrupted by strong southerly winds, particularly in March and April, which break up the ice arch and push the ice field away from the river mouth. A wind change back to the north pushes the ice field back into the river and if no ice arch forms, floe ice may enter the river in large quantities to form a huge ice jam, as it did in 1984. Ice jams of roughly similar magnitude occurred in the St. Clair River in 1901, 1920, and 1942.

Concentration of toxic materials are elevated in the sediments in several areas in the SCDRS. No contaminant data were collected in the present study, but past work has demonstrated that the presence of contaminants affects the

health and abundance of fish, macrophytes, and particularly macrozoobenthos. In the St. Clair River levels of polychlorobiphenyls (PCBs) exceeded the Ontario guidelines (50 ppb) and International Joint Commission (IJC) objectives (100 ppb); certain areas can be classified as being heavily polluted with mercury (> 1 ppm), as judged by the U.S. Environmental Protection Agency (EPA) standards; oil and grease levels were within acceptable tolerances. In Lake St. Clair, cadmium levels (> 1 ppm) exceeded Ontario's guidelines and mercury levels exceeded EPA's guidelines. In the Detroit River, PCB, oil and grease, cyanide, chromium, cadmium, and mercury levels exceeded EPA's guidelines for heavily polluted sediments.

A total of 756 macrozoobenthos samples were collected with a Ponar grab along 21 transects in the St. Clair River, Lake St. Clair, and Detroit River in May and October in 1983 and 1984. Stations along the transects were at three locations: on the sloping side of the shipping channel (channel stations), immediately adjacent to the channel on the crest of the channel slope (near-channel stations), and between the crest of the channel slope and the adjacent shoreline (off-channel stations). Aquatic macrophytes were collected during late June, late July-early August, and early September at Stag, Fawn, and Russell islands in the St. Clair River, and at Belle Isle, Point Hennepin, and Stony Island in the Detroit River. A sampling grid composed 500-ft-square blocks was used to distribute sampling effort. Grapnel hauls were made at the grid intersections and Ponar or hand-harvested samples were taken within individual blocks. Juvenile fish were sampled with hoop nets at the same locations at which macrophytes were collected, during late May, late June, late July-early August, early September, and early October in 1983 and 1984. At each location, two nets were set in submersed aquatic vegetation, and two others in nearby non-vegetated areas. A total of 40 net sets were made at each location during the two years of the study.

The diversity of macrozoobenthos within SCDRS was highest in the upper Detroit River, where we identified 101 taxa, and lowest in Lake St. Clair, where we recorded 65; we collected 98 taxa in the upper St. Clair River, 95 in the lower St. Clair River, and 80 in the lower Detroit River. Identifications usually were made only to genus, family or higher level; however, as judged by our species identification of adult aquatic insects, the list of taxa of macrozoobenthos in SCDRS might easily exceed 300 species.

The densities of most taxa of macrozoobenthos were significantly higher in 1983 than in 1984, in October than in other months, and at the off-channel stations than at other stations. Densities of most taxa were highest in the St. Clair River. Of particular interest were the taxa with significantly higher populations in 1983 than in 1984. If the low densities occurred mainly in spring 1984 in the St. Clair River and no recovery occurred by fall 1984, we might postulate that the ice jam in May 1984 caused long-term damage. Densities of nine taxa were lower in the spring in 1984 than in 1983:

Amnicola, Chironomidae, Gammarus, Harpacticoida, Hyalella, Isopoda, Nematoda, Oecetis, and Turbellaria The lower density were restricted to the St. Clair River, particularly in the lower section. Among these taxa, the densities of

Nematoda, Isopoda, Gammarus, Chironomidae, and Oecetis had recovered in fall 1984 to levels equalling or exceeding those in fall 1983; the densities of Turbellaria, Harpacticoida, Hyalella, and Amnicola were still low in fall 1984. Mean biomass ranged from 0.03 to 4.84 g/m² over the 21 transects. Biomass was highest in the Russell Island and Belle Isle areas and lowest near lower Lake Huron. Average total densities ranged from 976 to 96,684/m² over the 21 transects in 1983-1984, and the average number of taxa at each transect ranged from 9 to 38.

Twenty taxa of submersed macrophytes were collected in the St. Clair and Detroit rivers in 1983 and 1984; the most common, in order of frequency of occurrence, were Chara spp., narrow-leaf forms of Potamogeton spp., Vallisneria americana, Potamogeton gramineus, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis. Other taxa occurred in less than 13% of the samples. Chara spp. was the most commonly collected taxon in the St. Clair River and V. americana was the most common in the Detroit River. The total number of taxa at each location ranged from 7 to 14 and was highest in September. Percent occurrence of individual taxa during each sampling period between 1983 and 1984 varied less than 10% at each location.

In the St. Clair River in June, most submersed macrophyte taxa were less abundant in 1984 than in 1983. However, a paired comparison of all taxa showed significant differences only at Russell Island. A similar decline in biomass of dominant taxa occurred in the Detroit River, but was significant only at Belle Isle. Biomass of most taxa in September was similar in 1983 and 1984. Changes in the areal extent of the submersed macrophyte beds also showed similar trends between years, months, and locations.

Emergent macrophyte taxa were present in only two of the sampling grids at the six locations. A small bed of Scirpus acutus was at the tip of Fawn Island. Stony Island had extensive beds of Typha latifolia and Sparganium eurycarpum, usually in monotypic stands, and the species of Eleocharis, Phalaris, Sagittaria, and Scirpus occurred together in mixed stands. Mean dry weight biomass of individual taxa varied from 10 to more than 2000 g/m².

We captured 1,771 fish of 36 species in 1983 and 1,038 fish of 26 species in 1984. Of the total of 39 species represented, only 7 were common (> 50 fish collected in each year); yellow perch, rock bass, hornyhead chub, spottail shiner, striped shiner, rainbow smelt, and white sucker collectively made up 86% of the total for both years combined. Only yellow perch and rock bass were common to both rivers in both years. An average of 2.4 species was collected per net set in 1983 and 1984. The number of species collected was higher in the Detroit River than in the St. Clair River. The mean catch of all species combined was nominally larger in 1983 than in 1984, increased from May to October, was larger in the St. Clair River than the Detroit River, and was larger in nets set in vegetation than in those set in non-vegetated areas. However, most of these differences were not significant at the 0.05 level. The mean catches of yellow perch and rock bass were nominally higher in 1983 than 1984, but were significantly higher only at Russell Island and Belle

Isle. Significantly more yellow perch were caught in nets set in vegetation than in those set in non-vegetated areas at Fawn Island. A statistically significant relation between catch and vegetation was not observed for other species or at other locations. Most of the fish caught were adults.

The number of taxa of macrozoobenthos collected in this study (160) exceeded that in any previous work on the SCDRS. Comparison with other large river systems indicated that the diversity and density of macrozoobenthos is much greater in SCDRS than in most other rivers of the world. Sediment particle size and contaminant distribution basically determined the benthic community in the SCDRS. The St. Clair River, with its wider range of sediment size and diverse macrophyte community, was dominated by pollution intolerant aquatic insects, amphipods, and snails. Diversity was similar in the area around Belle Isle in the Detroit River. Low diversity of macrozoobenthos in the lower Detroit River reflected a moderate effect of contaminants. The constant flow, low turbidity, and luxuriant macrophyte growth in SCDRS were major factors in stabilization and in the incorporation of fine deposits into the sediments of the off-channel areas. As a result, densities and biomass of macrozoobenthos were much higher than in the shifting sand habitat characteristic of most rivers.

Community diversity, biomass, and percent coverage of macrophytes has remained stable in SCDRS since at least 1978. The taxonomic composition and abundance of aquatic macrophytes probably reflects the stability of flow more than any other environmental variable. The lack of spates provides long-term stability to the system. Narrow-leaf forms of Potamogeton spp. were more common at shoal areas at the head and side of islands in SCDRS than along the shores of both mainlands. The maximum biomass estimates for the SCDRS were on the low side of the range reported for aquatic macrophyte stands in rivers at temperate latitudes (110-520 g/m²). We found the highest biomass in September at every island, although biomass values for September were not significantly different from those for July-August at Belle Isle and Pt. Hennepin. Turbidity may be high enough in the Detroit River to prevent development of certain species of submersed macrophytes in the deeper littoral areas.

This was the first study of the juvenile fish community in the near-channel areas of SCDRS. Most species in the vicinity of these island shoals were either rare, transient species, or preferred other areas of the river. It is also possible that we were not adequately sampling this community. We found that the tendency for catches of fish to be higher in plant beds than in non-vegetated areas, may be species-specific, and depend on location; the tendency was also stronger in 1983 than 1984, and was correlated with season. Three of the four common species inhabiting the island shoals were more abundant in vegetated than in non-vegetated areas.

The ice jam in spring 1984 appeared to affect at least two of the three groups studied. Nine of the 24 most abundant taxa of macroinvertebrates declined in abundance in spring 1984, but only in the St. Clair River. Six of these taxa had recovered in fall 1934 to levels equalling or exceeding those

3-1-1

in fall 1983 and the densities of the other taxa were within 30% of those in 1983. Areal coverage by submersed macrophytes was somewhat less in spring in 1984 than in 1983, particularly in the St. Clair River, but recovered to 1983 levels by fall 1984. Plant biomass varied between years and locations, and no consistent differences could be attributed to the ice jam. Catches of fish were lower in 1984 than in 1983, but differences in numbers between location and month were inconsistent. Observed differences in the plant community could be attributed to lower temperatures, and ice-scour may have reduced the density of several taxa of macrozoobenthos.

This study was conducted to describe the distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fishes in SCDRS in 1983-84. We believe that we have addressed this objective for the open water season on SCDRS within the constraints imposed by our data set, and that our study provides a baseline data set that can be used to evaluate the major effects of any future extension of the navigation season. We do not believe that the results of our study can be used alone to answer the question of whether increased winter vessel traffic will have a measurable effect on the biota of SCDRS. Such an evaluation would require minimally the development of one or more realistic scenarios in which the potential effects of vessel passage in the extended season on ice, water, and sediment movement in the SCDRS was adequately characterized, so that the impact of these physical changes on biota could be examined over the range of expected conditions. Although some adverse effects may have been associated with the ice jam in April 1984, we cannot provide evidence to show that the ice jam was caused or exacerbated by navigation, or that the jam simulated conditions that might result from vessel operation in January or February. We believe that an evaluation of the potential impacts of winter navigation on SCDRS would be facilitated by the development of an energy flow model plus an age-structured fishery model. Research funded by the U.S. Army Corps of Engineers on SCDRS has provided a substantial base for development of models of these kinds. Additional data are needed on phytoplankton, periphyton, zooplankton standing crop and production, and terrestrial inputs to complete the energy budget. This information would permit quantification of the simultaneous effects of all components, according to their interrelationships in the ecosystem, and avoid the problem associated with a piecemeal evaluation of the individual components. Such models would be useful in partitioning impacts, so that rational remedial strategies and mitigation could be attempted.

# CONTENTS

| ABSTRACT PREFACE PREFACE SIDENTIFY EXECUTIVE SUMMARY INTRODUCTION  DESCRIPTION OF THE STUDY AREA MATERIALS AND METHODS Macrozoobenthos Aquatic Macrophytes Juvenile Fish  13      |
|---|
| PREFACE : ii EXECUTIVE SUMMARY : iv INTRODUCTION : 1  DESCRIPTION OF THE STUDY AREA : 2 MATERIALS AND METHODS : 8 Macrozoobenthos : 8 Aquatic Macrophytes : 10 Juvenile Fish : 13 |
| EXECUTIVE SUMMARY INTRODUCTION  DESCRIPTION OF THE STUDY AREA MATERIALS AND METHODS Macrozoobenthos Aquatic Macrophytes Juvenile Fish  13   |
| DESCRIPTION OF THE STUDY AREA  MATERIALS AND METHODS  Macrozoobenthos  Aquatic Macrophytes  Juvenile Fish  1  |
| DESCRIPTION OF THE STUDY AREA  MATERIALS AND METHODS  |
| MATERIALS AND METHODS   |
| MATERIALS AND METHODS   |
| Macrozoobenthos   |
| Aquatic Macrophytes   |
| Juvenile Fish   |
|   |
| 300H T0   |
| TESULTS   |
| Macrozoobenthos   |
| Taxonomic composition   |
| Major Taxa and Their Distribution   |
| Biomass 40  |
| Density and Diversity40   |
| Physical Characteristics of the River   |
| Relationships between Macrozoobenthos and Physical  |
| Environment   |
| Aquatic Macrophytes   |
|   |
|   |
| Distribution of Emergent Plants   |
| Abundance of Submersed Plants   |
| Abundance of Emergent Plants  |
| Areal Extent of Submersed Macrophyte Beds   |
| Relationship between Macrophytes and Physical Environment 65  |
| Juvenile and Adult Fish   |
| Composition and Distribution of Catch   |
| Abundance 75  |
| Abundance   |
| DISCUSSION  |
| Distribution and Abundance of Macrozoobenthos   |
| Distribution and Abundance of Submersed Macrophytes 97  |
| Distribution and Abundance of Fish  |
| Characterization of SCDRS Habitats  |
|   |
|   |
| CONCLUSIONS AND RECOMMENDATIONS   |
| LATERATURE ATTER  |
| LITERATURE CITED  |
| A: Sampling Locations for Macrozoobenthos   |

C: Density and Percent Frequency of Occurrence of Macrozoobenthos - A Summary by Taxon, Year, and Location

D: Density and Total Biomass of Macrozoobenthos - A Summary by Year, Month, Transect, and Station

E: Macrozoobenthos Ponar Grab Biomass Data

F: Macrozoobenthos Physical Data G: Macrozoobenthos Physical Data - A Summary

H: Macrozoobenthos ANOVA Tables

I: Aquatic Macrophyte Sampling Locations

J: Graphel Collections of Submersed Macrophytes K: Submersed Macrophyte Grapnel Data - A Summary L: Ponar Grab Collections of Submersed Macrophytes

M: Collections of Emergent Macrophytes

N: Index Charts for Aerial Photographs and Photographs of Macrophyte Study Areas

0: Macrophyte Distribution Maps P: ANOVA Tables of Macrophytes

Q: Catch Data for Hoop Nets R: ANOVA Tables for Fish

S: Physical Data for Hoop Net Sites

ENVIRONMENTAL STUDIES OF MACROZOOBENTHOS, AQUATIC MACROPHYTES, AND JUVENILE FISHES IN THE ST. CLAIR-DETROIT RIVER SYSTEM, 1983-1984

#### INTRODUCTION

The U.S. Army Corps of Engineers (Corps) is considering the extension of operation of the Locks at Sault Ste. Marie, Michigan, from 8 January ± 1 week to 31 January ± 2 weeks. To provide information needed in the preparation of a Supplemental Environmental Impact Statement addressing this extension in the winter operation of the lock facilities at Sault Ste. Marie, Michigan, and the subsequent increase in vessel traffic in the St. Clair-Detroit River system (SCDRS), the Corps funded a comprehensive environmental study of SCDRS in 1983-1985. The SCDRS includes the St. Clair River, Lake St. Clair, and the Detroit River. The present study of macrozoobenthos, aquatic macrophytes, and juvenile fish in SCDRS is an integral part of that comprehensive study. Other components of the Corps-funded research on this system include those undertaken by the U.S. Army Cold Regions Research and Engineering Laboratory on sediments and water chemistry, by the Michigan Department of Natural Resources on adult fish populations and anglers' catches, and by the U.S. Fish and Wildlife Service (Sandusky Biological Station) on fish spawning and nursery areas (Muth, K. M. et al. 1986).

The objectives of the present study were (1) to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fish within SCDRS, and (2) to predict the potential environmental impact of an extended navigation season on these organisms in SCDRS.

Currently (1986) there is some navigation on SCDRS during the proposed extension period. This is the contemporary baseline condition, and extension of lock operation would result in increased vessel traffic in the system over and above the 1986 situation. Ice cover is limited or lacking in both St. Clair and Detroit rivers during normal winters, but usually is well developed on Lake St. Clair. Potential impacts of extended lock operation would typically be evaluated on the basis of anticipated or modeled considerations involving the biology, distribution and abundance of organisms in relation to ship movement and ice breaking during winter ice conditions. However, an extensive ice jam (described later), that occurred in spring 1984 on the St. Clair River, provided an opportunity to evaluate differences in abundance and distribution of biota that might be attributable to relatively large between-year differences in ice cover, shipping activities, and ice scour.

Concern over possible adverse impacts of winter shipping on the Great Lakes has provided impetus for a number of environmental studies on connecting channels over the past several years (Gleason et al. 1979; Hiltunen 1979, 1980; Jones 1982; Liston et al. 1980, 1981; and Poe et al. 1980). These studies were supplemented by pollution related studies on SCDRS (USACE 1980; Harlow 1965; Michigan Water Resources Commission 1967; Ontario Ministry of the Environment 1979; Texas Instruments 1975; and Thornley and Hamdy 1984). Studies on fish in SCDRS (Goodyear et al. 1982; Hatcher and Nester 1983; and

Poe 1983) documented the distribution of important taxa and their habitats. An annotated bibliography of macrozoobenthos and aquatic macrophytes in SCDRS was prepared with Corps funding (McCauley 1985). Limno Tech, Inc. (1985) developed a bibliography and summary of the water quality problems in the system. Thornley and Hamdy (1984) and the Ontario Ministry of the Environment (1979) described the impact of man's discharge of contaminants, particularly of organics and heavy metals, on the biota and habitat. Many of these studies have pointed out the importance to the fishery of the extensive, submersed macrophyte beds and their stable, macrozoobenthos-rich substrates.

One of the major environmental concerns associated with the impact of winter navigation was the possibility of increased scouring of benthic habitat by flow modifications and ice, and the displacement downstream of plants, benthos, and substrate (Poe and Edsall 1982). In the present study we focused on upstream areas of five islands and one shoal area that the USACE identified as potentially vulnerable to impact by ice scour during an extended navigation season. All six areas were extensively covered with submersed macrophytes. Aerial photographs and plant and fish samples were taken from spring to fall in 1983 and 1984 in each area. The benthos samples were collected along the main navigation channel throughout the SCDRS, in spring and fall in 1983 and 1984.

Given the possible impact of ice scour on the benthic habitat in the St. Clair River in 1984, we concentrated on statistically analyzing variation in the abundance of major taxa of macrozoobenthos between years and between rivers, in relation to physical variables and changes in fish and plant populations. We then focused our attention on variation in community structure of macrozoobenthos, plants, and fish in relation to the effects of the ice jam.

#### DESCRIPTION OF THE STUDY AREA

The study area extended from Port Huron on the north to the lower end of Grosse Ile on the south, including the St. Clair and Detroit rivers (Fig. 1). The surface bedrock geology in the study area dates back to the Devonian period, is of marine origin, and consists mainly of shales in the St. Clair River and Lake St. Clair, and dolomites in the Detroit River. Glaciation has modified the topography by scouring and filling. The SCDRS lies in a morainal trough and is characterized by sediments consisting of glacial till and lake and stream deposits. The rivers are incised into a bed of glacial, lakedeposited clays with thicknesses of 80-200 ft (24-61 m) in the St. Clair River (Cole 1903) and 20-140 ft (6-43 m) in the Detroit River (Mozola 1969).

The SCDRS which is 89 mi (143.2 km) long, and drops 8 ft (2.4 m) between Lake Huron and Lake Erie, can be divided into five major segments: the upper St. Clair River, the lower St. Clair River, Lake St. Clair, and the upper and lower segments of the Detroit River (Fig. 1). Most of the following hydrographic information on the system comes from Derecki (1984 a, b, c). The upper St. Clair River is 27.9 mi (45 km) long and receives water from Lake

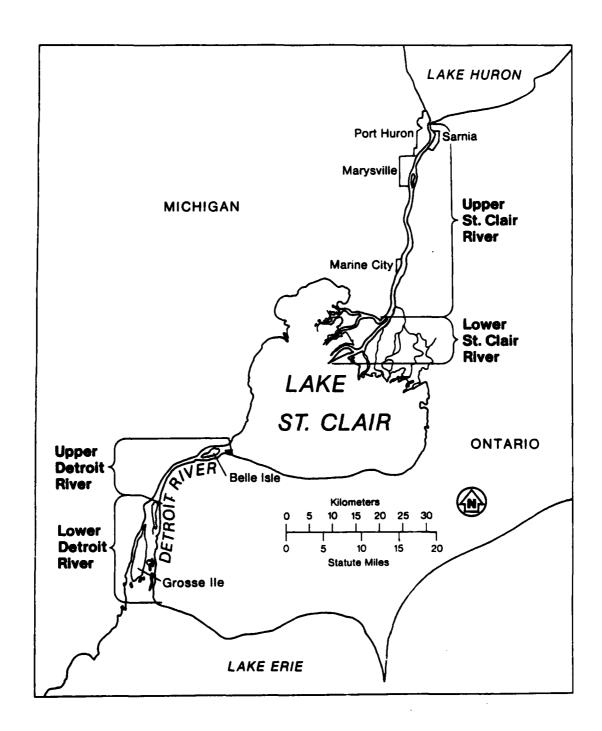


Figure 1. The St. Clair-Detroit River System.

Huron and three major tributaries (the Black, Pine, and Belle rivers). The lower St. Clair River, begins at the branching of the north and south channels near Algonac, Michigan, is 11.2 mi (18 km) long and divides to form a large delta area consisting of three main channels (north, middle, and south) and a number of secondary channels that empty into Lake St. Clair.

Width of the St. Clair River ranges from 820 to 3,940 ft (250-1200 m) and averages 2,625 ft (800 m) in the upper section. The widths of the three main channels in the delta area range from 700 to 3,000 ft (214-915 m). Mid-channel depths are 27 to 70 ft (8.2 - 21.5 m); a minimum statutory depth of 27 ft is maintained by dredging. Littoral depths are typically 6-13 ft (1.8-4.0 m). Mean annual discharge rate of the St. Clair River into Lake St. Clair was  $214,000 \text{ ft}^3/\text{s}$  (6,060 m<sup>3</sup>/s) in 1983 and 209,000 ft<sup>3</sup>/s (5,920 m<sup>3</sup>/s) in 1984. These flows are about 17% higher than the historical average discharge of 180,000 ft $^3$ /s (5,100 m $^3$ /s). Velocities in the St. Clair approach 6 ft/s (1.8 m/s) in the navigational channel and range from 0.3 to 2.8 ft/s (0.09-0.86 m/s)near the channel. Total flushing time from Lake Huron to Lake St. Clair is normally about 21 hours; about one-third of this time is required to flush the delta area. Stag and Fawn Islands, 8.7 mi (14 km) and 21.7 mi (35 km) respectively, downstream from Lake Huron, are the only islands in the upper section of the St. Clair River. The delta area includes Russell, Harsens, Dickinson, and Seaway islands.

Lake St. Clair has a surface area of about 430 mi² (1,114 km²), a mean depth of 11 ft (3.4 m), and a maximum natural depth of 21 ft (6.4 m). A navigation channel 18 mi (29 km) long, which has a statutory depth of 27 ft (8.2 m) bisects the lake from the mouth of the South Channel of the St. Clair River to the head of the Detroit River. These data are based on a Great Lakes low water datum of 573.3 ft (174.7 m) above mean sea level; in 1983-1984 the water levels were 3.25 ft (1.0 m) above this low-water datum. Major tributaries are the Clinton River on the United States side and the Sydenham, Thames, Belle, and Ruscom rivers on the Canadian side. Flushing time of the lake is 5-7 days.

The upper Detroit River, which is 13 mi (21 km) long, receives water from Lake St. Clair. The lower Detroit River, which is 18.9 mi (30.5 km) long, begins at the head of Fighting Island, where the river separates into three channels (Trenton, Livingstone, and Amherstburg). Major tributaries are the Rouge and the Ecorse rivers, both on the U. S. side. Width of the river ranges from 1,970 to 8,450 ft (600 - 2,600 m) in the upper section, and from 4,920 to 10,400 ft (1,500 - 3,000 m) in the lower section. Mid-channel depths are 20 - 49 ft (6.2 - 15.1 m) and littoral depths are 7-20 ft (2.2-6.2 m). Mean annual discharge rate of the Detroit River into Lake Erie was 217,000 ft  $^3$ /s (6,140 m $^3$ /s) in 1983 and 215,000 ft  $^3$ /s (6,090 m $^3$ /s) in 1984. These flows are about 17% higher than the historical average discharge of 185,000 ft  $^3$ /s (5,200 m $^3$ /s). Average flow velocities were 2 - 6 ft/s (0.6 - 1.8 m/s) in the mid-channel region and 0.1 - 1.9 ft/s (0.03-0.58 m/s) in the nearshore and near channel areas. Total flushing time from Lake St. Clair to Lake Erie is about 19 hours in the main channel. The upper river has two large islands,

Peach Island and Belle Isle, and the lower river has Fighting Island, Grosse Ile, Bois Blanc, and several small islands.

The climate in the study area is semi-maritime due to its proximity to lakes Huron and Erie. The mean annual surface air temperature is  $9-10^{\circ}\text{C}$  (48-50°F); however, intense cells of cold arctic air can lower temperatures as much as 28°C (81°F) over a 24-hour period. Air temperatures from December to March averaged 4.6°C lower in 1983-1984 than in 1982-1983. Air temperatures were 1.0°C higher in April-June and 1.7°C lower in July-September in 1984 than in 1983 (Fig. 2).

High winds and storms are common and significantly affect the thermal budgets of Lake Huron and SCDRS. Prevailing winds are from the west. High winds generate seiches and surges that strongly affect the lower Detroit River, causing water levels to rise or fall 2-3 ft. Wind speed and direction also sometimes affect ice buildup and cause ice jams in the St. Clair River. Typically the river remains clear of ice and only a narrow band of shore ice forms along the banks, except in the delta area. However, ice may enter the St. Clair River from Lake Huron under the influence of northerly winds. The current carries this ice downstream until it meets resistance from solid ice cover in the delta or in Lake St. Clair. When large amounts of ice enter the system, the ice accumulation may extend upstream from Lake St. Clair nearly to Port Huron (Fig. 1). During most of the winter a large natural ice arch forms at the outlet of Lake Huron and prevents ice from entering the river. This condition usually lasts through the winter, but strong southerly winds, particularly in March and April, may disrupt the ice arch and push the ice field away from the river mouth. If the ice arch does not re-form, a north wind can then push the ice field back into the river in large quantities, as it did in 1901 (Cole 1903), 1920, 1942, and 1984 (USACE 1984).

In 1984 the ice jam in the St. Clair River lasted from April 5 to April 30 (USACE 1984). On April 1 no ice existed in the St. Clair River, but a large pack of ice covered the southern portion of Lake Huron. On April 5 a large amount of ice was reported floating downstream in the vicinity of Marine City. By April 7 pack ice extended from Marysville to the mouth of the St. Clair River. The large ice pack in Lake Huron and persistent winds from the north in April choked the St. Clair River with ice until April 30. Ice as thick as 8 ft was reported. Water temperature during April in the St. Clair River was about 6°F lower than normal and a reduction in flow of almost 95,000 ft³/s (2690 m³/s) resulted in a 2-ft drop in the Lake St. Clair water level for about 3 days. During April at least 140 vessels were led through the St. Clair River by four Coast Guard ice breakers. Movement through the river at this time was slow and difficult, and several vessels ran aground.

The upper Detroit River normally does not freeze over, except in the broad, shallow area between Belle Isle and the United States mainland. Minor ice jams occur when large quantities of floe ice from Lake St. Clair encounter the narrow channel and shallow ice-covered areas in the lower river, which block downstream passage of the floe ice. Easterly winds can also cause

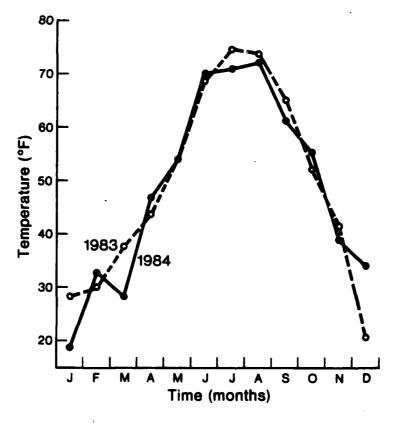


Figure 2. Mean monthly air temperatures in 1983 and 1984 at Windsor, Ontario, airport.

jams by moving Lake Erie ice into the lower river. Ice cover develops in the lower river in the broad, shallow expanses adjacent to the many islands; however, the main navigation channels are generally open. Occasionally the river fills completely with ice, when there is heavy ice movement from Lake St. Clair and the river mouth is blocked by ice from Lake Erie (Derecki 1984 c).

Concentrations of toxic materials in sediments are elevated in several areas within SCDRS. Although we collected no data on contaminants, past work has demonstrated that contaminants adversely effect the health and abundance of fish, macrophytes, and particularly macrozoobenthos (Limno-Tech, Inc. 1985). Concentrations of pollutants in the sediments of SCDRS are relatively high and some exceed EPA criteria; potential contaminants treated by Ontario's guidelines and IJC objectives are polychlorinated biphenyls (PCB), hexachlorobenzene (HCB), octachlorostyrene (OCS), phenol, polyaromatic hydrocarbons (PAH), cyanide, oil and grease, cadmium, chromium, and mercury. The contaminated areas tend to be near shore, and near point sources, but also include depositional zones far removed from known point sources. The distribution of contaminants in sediments is difficult to assess--as it is in most riverine environments. The major point source in the St. Clair River is the Sarnia industrial complex. The reported ranges of concentrations of contaminants in the upper St. Clair River follow: PCBs, 0-10,000 ppb; OCS, 0-193 ppb; oil and grease, 250-600 ppm; and mercury, 0.1-58 ppm. PCB levels exceed the Ontario guidelines (50 ppb) and IJC objectives (100 ppb), and mercury in certain areas (>1 ppm) exceeds the EPA guidline (no standards exist for OCS in sediments). Oil and grease levels are acceptable in most areas. Concentrations of contaminants are lower in the St. Clair delta, but sampling there has been limited. Deposition of sediments in Lake St. Clair in the mid-lake area near the navigational channel has resulted in the following ranges of concentrations: PCB 0-50 ppb, HCB 36-99 ppb, OCS 0-30 ppb, cadmium 1-2 ppm, and mercury 1-3 ppm. Cadmium concentrations (>1 ppm) exceed Ontario's guidelines and mercury levels indicate heavy pollution; no guidelines exist for HCB in sediments. The entire Detroit River--particularly the lower section associated with the industrial complex on the U.S. shore--is the most severely polluted area in SCDRS. Pollutants include PCB 0-3800 ppb, HCB 0-36 ppb, OCS 0-10 ppb, oil and grease 100-29,000 ppm, cyanide 0.25-2.94 ppm, phenols 0-1 ppm, chromium 4-330 ppm, mercury 0-8 ppm, and cadmium 0-17 ppm. PCB, oil and grease, cyanide, chromium, cadmium, and mercury levels exceed EPA's guidelines for heavily polluted sediments. No standards exist for phenol or PAH. A total of 15 PAH compounds have been found at detectable levels, and mean concentrations of individual compounds measured have been as high as 39 ppm. Some of these data were collected in the 1970's, and some pollutants have declined since then. Hamdy and Post (1985) concluded that mercury in superficial sediments of the Detroit River declined substantially between 1970 and 1980. Pugsley et al. (1985) could not determine whether PCB levels in sediments had decreased or remained reasonably static in SCDRS over the last 10 years, and Mudroch (1985) found metal concentrations in the Detroit River to be significantly higher in 1983 than in 1969-73. More data are needed to provide a comprehensive and current assessment of contaminants in sediments, and to establish standards.

#### MATERIALS AND METHODS

#### **MACROZOOBENTHOS**

A total of 756 macrozoobenthos samples were collected with a standard Ponar grab (484 cm²) along 21 transects in the St. Clair River, Lake St. Clair, and the Detroit River (Fig. 3; Appendix A). The sampling locations were considered to be areas most likely to be affected by ice scour or vessel passage during winter navigation. Triplicate samples were taken at each of three stations on each transect in May and October in 1983 and 1984. Stations were located on the sloping side of the shipping channel (channel stations), immediately adjacent to the channel on the crest of the channel slope (near-channel stations), and between the crest of the channel slope and the adjacent shoreline (off-channel stations). Sampling was most difficult on the channel slope because the hard, current-swept bottom could not be sampled effectively with a Ponar grab; it was particularly difficult in the lower Detroit River, where the bottom type is mainly bedrock and boulders. Samples were concentrated in the field by washing them in a standard U.S. No. 30 sieve (0.65 mm mesh), preserved in a 10% formalin-phloxine B mixture, and taken to the laboratory for processing.

In the laboratory, each sample was divided into aliquots of a size convenient for processing and the organisms were then extracted manually from each. The residue from the aliquots collectively composing a sample was then pooled and mixed with a sugar solution to float any remaining organisms, which were then extracted manually from the sugar solution and added to those previously removed from the sample. Samples that required more than 20 man-hours to process (i.e., samples containing large numbers of Hydra and small oligochaetes) were reduced as follows. All organisms except Hydra and small oligochaetes were removed from the sample and the rest of the sample was then subdivided with a Folsom Splitter until a 1/8 aliquot was obtained. In this aliquot, the total numbers of Hydra and oligochaetes were counted and these counts were then used to estimate the total number of organism of each taxon that was present in the whole sample. Macrozoobenthos density data (No./m²) at each station is shown in Appendix B and summarized in Appendices C and D.

Macrozoobenthic organisms were placed on a glass fiber filter, dried in an oven at 60°C for 24 hours, and weighed to the nearest 0.1 mg for biomass determinations. Ash-free dry weight was obtained by reheating the dried samples in a muffle furnace at 525°C for 1 hour. The biomass data are given in Appendix E.

Organisms picked from the samples were identified to the lowest feasible taxon before they were dried. Most were identified to genus; when mature specimens were available (e.g. clams, leeches, copepods and cladocerans), identification was to species; and other forms such as nematodes, turbellarians, oligochaetes, and mites were identified only to family level or a higher taxon. Specimens of leeches were sent to Don Klemm (U.S. Environmental

)

**(** 

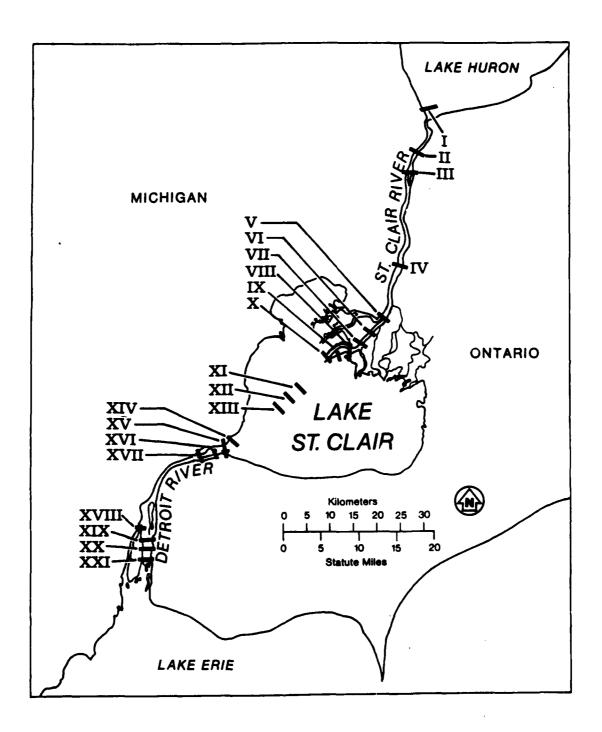


Figure 3. Macrozoobenthos sampling locations.

Protection Agency), and freshwater mussels to Tom Freitag (Corps, Detroit District), for identification and verification. To complement the collection of immature insects and to develop a species composition list of aquatic insects living in SCDRS, adult insects were collected periodically with sweepnets and light-traps from May to October during both years. Adults of major taxa were sent to the following specialists for identification and verification: Brian Armitage, Athens University, Athens, AL (Trichoptera); Ken Tennessen, Tennessee Valley Authority, Decatur, AL (Odonata); Manny Pescador, Florida Agricultural and Mechanical University, Tallahassee, FL (Ephemeroptera); and Ole Saether, University of Bergen, Bergen, Norway (Chironomidae).

At each macrozoobenthos station we recorded Loran coordinates (TI 9900 Loran C Navigator; accuracy given in manual as  $\pm 300$  ft), water depth (sounding line or Ray Jefferson Model 202, depth computer), surface and bottom measurements of current velocities (Marsh McBirney Model 201 Portable Water Current Meter), bottom type (e.g. silt, sand) as estimated by visual and textural means, and water temperature (Yellow Springs Instruments Model 54 Oxygen Meter). The physical data set is given in Appendix F and summarized in Appendix G.

The macrozoobenthos data were subjected to analysis of variance (ANOVA) to test for significant ( $P \le 0.05$ ) differences in abundance between stations, transects, months, and years (Appendix H). We transformed density estimates using square root transformations (No./m² + 0.5)², so that ANOVA assumptions of normality and homogeneity of variance were better met. We used Tukeys Studentized Range Test to distinguish among levels of abundance at each station, transect, month, and year. To assess the relationship between macrozoobenthos density and environmental variables (depth, water velocity, bottom type, and temperature), we used the Pearson Product-Moment Correlation procedure. We performed all statistical analyses with SAS (SAS Institute Inc. 1982).

#### AQUATIC MACROPHYTES

Aquatic macrophytes were collected during late June, late July-early August, and early September at Stag, Fawn, and Russell islands in the St. Clair River, and at Belle Isle, Point Hennepin, and Stony Island in the Detroit River. Plants were sampled at the upstream end of each island and on the side of the island adjacent to the navigation channel (Fig. 4). A sampling grid with 500-ft-square blocks was used to distribute sampling effort at each site (Appendix I). The grid was set by using a 100-ft tape, staff buoys, and line-of-sight compass readings on shore structures. After the grid buoys were in place, we made grapnel hauls at the grid intersections and collected Ponar or hand-harvested samples within individual blocks.

Mention of name brands does not imply Government endorsement of commercial products.

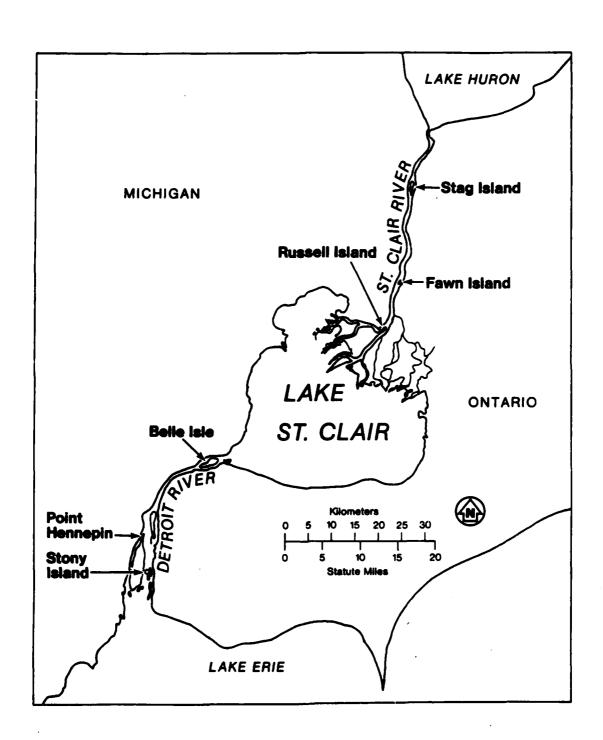


Figure 4. Sampling locations for aquatic macrophytes and juvenile fish.

The grapnel was lined with 1-cm-square mesh hardware cloth and was dragged along the bottom for a distance of 30 ft at each grid intersection. Submersed macrophytes collected with the grapnel were sorted to species, the percent abundance of each taxon collected was estimated, the total weight of the sample was taken, and the sample was discarded in the field. Water depth at grapnel stations was 2-35 ft. The data set is in Appendix J and is summarized in Appendix K.

Once the grapnel collections were completed, the dominant stand of submersed or emergent vegetation in each block was selected on the basis of the grapnel collections and visual observation. Each block was then sampled in triplicate, either with a standard Ponar dredge (for submersed plants), or by hand with a 0.6-m² steel hoop (for emergent plants). Sampling depths were 2 to 13 ft. At several locations, some blocks contained no vegetation and others contained several stands that were considered to be dominant. Blocks that had several dominant or subdominant stands were revisited and were sampled in triplicate until the following minimum number of samples had been obtained during each sampling period at each location:

| <u> 3t. (</u> | Jair Kiver | •  | Detroit River |
|---------------|------------|----|---------------|
| C+20          | Icland     | 60 | Pollo Telo    |

| Stag Island    | 60 | Belle Isle     | 40 |
|----------------|----|----------------|----|
| Fawn Island    | 44 | Point Hennepin | 56 |
| Russell Island | 36 | Stony Island   | 44 |

Samples of vegetation from each Ponar grab or steel hoop collection were placed in plastic bags, stored in a portable cooler, and transported to the laboratory. In the laboratory, macrophytes were sorted and identified by consulting taxonomic keys (Hotchkiss 1967, 1970; and Voss 1972). Dry weight ( $105^{\circ}$ C for 24 hours) and ash-free dry weight ( $525^{\circ}$ C for 24 hours) of each taxon in each sample was determined to the nearest 0.1 mg and reported as grams of plant matter per square meter of substrate sampled. Data for submergent macrophytes are in Appendix L and those for emergent macrophytes are in Appendix M. The analysis was done on dry weight biomass, but results can be converted to ash-free dry weight (AFDW) by using the following equation:  $\log_{\rm e}$  AFDW (g) = -0.5436 + 0.9984  $\log_{\rm e}$  dry weight (g), where n = 4100 and R<sup>2</sup> = 96%.

We encountered taxonomic difficulties with the narrow-leaf pondweeds and the Potamogeton gramineus-praelongus-illinoensis group. There were at least two narrow-leaf pondweeds in SCDRS (P. pectinatus and P. filiformis), that were difficult to identify to species when they were without flowers or seeds. Consequently we routinely identified them as narrow-leaf forms of Potamogeton and in the text refer to them as Potamogeton spp. Potamogeton natans, a broad-leaf form in its early stages of development, is superficially characterized by narrow leaves. Early in the season we identified it only as Potamogeton spp. Identification of P. gramineus, P. praelongus, P. illinoensis, and the occasional hybrid was difficult without seed structures, due to variations in leaf form (which depend on temporal and spatial growing conditions). Schloesser and Manny (1982), in an extensive survey of SCDRS in fall 1978, did not collect P.

praelongus, but recorded P. illinoensis at about 1% of the stations and P. gramineus at 6-15%. Probably P. gramineus made up 90% of this particular group of broad-leaf pondweeds in the SCDRS.

The distribution of aquatic macrophytes in the 500-ft square sampling blocks was mapped to scale by using 9- x 9-in., color, aerial photographs taken at each location during or immediately after each sampling period. The photographs were taken during mornings or afternoons when there was little cloud cover or wind, with a Wild Heerbrugg RC-8 camera (15.24-cm focal length. F 5.6 at 1/300 second) and Aerochrome MS aerographic (transparency) film (type 2448). The transparencies had a nominal scale of about 1:5000 and a minimum resolution of 1.5 m. Photograph coverage at each location was indexed on 1:15,000 scale NOAA charts by reference to landmarks visible on both the transparencies and the charts (Appendix N). Transparencies were examined with the aid of a translucent light table. The photointerpreter prepared a macrophyte map for each location and sampling period maps based on color, texture, and relative density of the submersed and emergent beds. Collateral ground truth information was also used in interpretation and preparation of the maps. One 9- x 9-in. color print (one-color balancing, no enhancement) was produced from each transparency (Appendix N) and used to construct the macrophyte maps shown in Appendix O.

At each macrophyte station we recorded Loran coordinates, water depth, surface and bottom measurements of water velocities, and incident light (Protomatic Incident Light Meter, foot candles). The physical data set for the grapnel collections is in Appendix J and is summarized in Appendix K. The physical data set for the Ponar grab collections is in Appendix L.

An ANOVA procedure was used to determine if the biomass of aquatic plants varied significantly (P < 0.05) among blocks, or sampling dates at each of the six islands (Appendix P). We used square root transformations to normalize the biomass estimates and Tukey's Studentized Range Test to distinguish between levels of abundance at each block, month, and year. Because replication within blocks was unequal, we used only the first three replicates (dominant stand) for analysis. This procedure resulted in a balanced design that is more accurate and computationally efficient than an unbalanced design. The Wilcoxon Signed Rank Test was used to test absolute differences between paired yearly biomass estimates of different taxa at each location and month. The Pearson Product-Moment Correlation procedure was used to assess the relation between taxa and environmental variables (depth, water velocity, and incident light).

# JUVENILE FISH

1

Fish were sampled with hoop nets in the St. Clair River at Stag, Fawn, and Russell islands, and in the Detroit River at Belle Isle, Point Hennepin, and Stony Island (Fig. 4) during late May, late June, late July-early August, early September, and early October in 1983 and 1984. The nets were 2.5 feet in diameter and 10 feet long, and constructed of 1-inch (stretched measure)

nylon mesh. Each net was fitted with wings about 6 feet long and 3 feet high, constructed of 2-inch mesh nylon. Nets were set in the gridded area used for macrophyte sampling, in water 3-6 ft deep, for 24 hours; the net mouth faced downstream. At each location, two nets were set in submersed aquatic vegetation and two others in nearby non-vegetated areas. A total of 240 net sets were made. Fish caught in each set were sorted to species, weighed to the nearest gram, measured (total length to the nearest millimeter), and released. Age was determined by consulting age-at-length records for fishes of Ohio, including western Lake Erie (Trautman 1981). The fish data set is in Appendix Q.

We used ANOVA techniques based on a factorial model for comparing catches. Because the lack of vegetation in spring 1984 unbalanced the study design for that year, we computed by regression with dummy variables. The factorial model included the effects of location (river); month and year, which were fixed; and the effect of plant density, which was considered random. Because of the relatively large number and levels of effects, we made the analysis by location (Appendix R). Catch data were normalized by using a square root transformation. The analysis was done on total catch, total number of species, and the catch of the two most common species—yellow perch and rock bass. We used Tukey's Studentized Range Test to distinguish among the levels of catch for each main effect. To assess the relation between catch and environmental variables (depth, current velocity, incident light, temperature, bottom type), we used the Pearson Product-Moment Correlation procedure.

At each station we recorded Loran coordinates, water depth, surface and bottom measurements of current velocities, incident light, bottom type, and water temperature. The physical data set for the fish collections is in Appendix S.

# RESULTS

# **MACROZOOBENTHOS**

### Taxonomic Composition

The diversity of macrozoobenthos in SCDRS was highest in the upper Detroit River, where we identified 101 distinct taxa, and lowest in Lake St. Clair, where we recorded 65. We counted 98 taxa in the upper St. Clair, 95 in the lower St. Clair, and 80 in the lower Detroit River. The taxonomic composition and abundance of macrozoobenthos, by location and year, are summarized in Appendix C where the 21 transects are grouped into five geographic regions (transect numbers in parentheses): upper St. Clair River (I-V), lower St. Clair River (VI-X), Lake St. Clair (XI-XIII), upper Detroit River (XIV-XVII) and lower Detroit River (XVIII-XXI). Many of the 162 taxa listed in Appendix C are higher level designations that include unidentifiable, immature, or damaged specimens; these taxa may include genera or species already listed. However, when counting taxa by location or year, we excluded those for which

lower order taxa belonging to the same group were already listed. The list assuredly underestimates the diversity of this system because lack of suitable keys restricted most of the identifications to genus, family, or a higher level. For example, the midges are listed only to family (Chironomidae), although the qualitative work we performed on both larvae and adults of this family indicated that the group included at least 58 genera and 127 species. However, comparisons can be made of relative diversity between areas and years in Appendix C because taxonomic effort was uniform throughout the study.

A few sponges were collected everywhere except in the lower Detroit River, where none were seen (Appendix C). Bryozoa were lacking in Lake St. Clair and were scarce at other locations. Two genera of coelenterates were represented in the samples by Cordylophora lacustris (a single specimen from the upper Detroit River), and Hydra (present throughout the system and one of the most common benthic taxa collected).

The flatworm taxa Rhabdocoela and Tricladida were common at all locations and in both years in SCDRS. Rhabdocoela were more common than Tricladida, particularly in Lake St. Clair. Tricladida occurred most frequently in the Detroit River. The two taxa were combined (as Turbellaria) and analyzed statistically in the next section. A single specimen of a third flatworm taxon, Trematoda, was collected in the Detroit River.

Nemertinea and Nematoda were collected at all locations in both years. Nemertinea usually occurred in over 50% of the samples in both rivers, but in only 1-2% of the samples taken from Lake St. Clair. Nematodes were ubiquitous, occurring in over 95% of the 756 samples collected.

The annelids Oligochaeta and Polychaeta were two of the most abundant taxa in the system. Oligochaetes were partly divided into smaller taxa, including Nais, Stylaria, Branchiura, and Spirosperma, because they could be easily identified. All remaining taxa were combined as Oligochaeta and occurred in every sample from the lower St. Clair River downstream. Nais was common in both rivers, but not in Lake St. Clair. Branchiura sowerbyi was collected only in the upper Detroit River. Spirosperma occurred in at least 50% or more of all samples at all locations, and in over 90% of the samples from the Detroit River. The only polychaete found, Manayunkia specicsa, was uncommon in the upper St. Clair River, but occurred in all of the samples from Lake St. Clair.

The other annelids in the system, leeches, were not abundant, and most specimens could be identified to species. A total of 12 species were identified (Table 1), of which 11 were recorded in the St. Clair River, 5 in Lake St. Clair, and 8 in the Detroit River. The upper and lower portions of the St. Clair River had similar total numbers of species (eight and nine, respectively), but had only five species in common. Of the species found in Lake St. Clair, only Placobdella montifera was unique to the lake. Glossiphonia complanata, Helobdella papillata, and Piscicola milneri were collected only in the St. Clair River. Most species occurred in less than 10% of the samples.

Table 1. Density (mean No./ $m^2$ ) and (in parentheses) percent frequency of occurrence of Hirudinea in Ponar grab samples from SCDRS in 1983-84.

|                                | - F. Na   |                   | d number of       | samples   | A Dance          |
|--------------------------------|-----------|-------------------|-------------------|-----------|------------------|
|                                | Upper     | ir River<br>Lower | Lake<br>St. Clair | Upper     | t River<br>Lower |
| Taxon                          | (n = 180) | (n = 180)         | (n = 108)         | (n = 144) | (n = 144)        |
| Actinobdella<br>inequiannulata | T (2)     | 0 (0)             | 0 (0)             | T (2)     | 0 (0)            |
| Batracobdella<br>phalera       | 0 (0)     | T (2)             | 0 (0)             | 0 (0)     | T (4)            |
| Erpobdellidae                  | 3 (23)    | 1 (5)             | 0 (0)             | 7 (23)    | T (2)            |
| Erpobdella punctata            | 1 (4)     | 0 (0)             | 0 (0)             | 1 (2)     | 0 (0)            |
| Glossiphoniidae                | 0 (0)     | 0 (0)             | 0 (0)             | T (6)     | 0 (0)            |
| Glossiphonia complanata        | 0 (0)     | 1 (7)             | T (3)             | 0 (0)     | 0 (0)            |
| Glossiphonia heteroclita       | 0 (0)     | 1 (5)             | 0 (0)             | 1 (10)    | T (2)            |
| Helobdella elongata            | T (4)     | 1 (8)             | 7 (33)            | 2 (15)    | 0 (0)            |
| Helobdella papillata           | T (2)     | T (2)             | 0 (0)             | 0 (0)     | 0 (0)            |
| Helobdella stagnalis           | T (4)     | 1 (5)             | 3 (31)            | 1 (10)    | 0 (0)            |
| Helobdella triserialis         | T (2)     | T (2)             | 0 (0)             | 1 (4)     | T (2)            |
| Hirudinea                      | T (4)     | 0 (0)             | 0 (0)             | 0 (0)     | 0 (0)            |
| Piscicolidae                   | 1 (4)     | T (3)             | T (3)             | 0 (0)     | 0 (0)            |
| Piscicola                      | 1 (10)    | 1 (7)             | 0 (0)             | T (2)     | 0 (0)            |
| Piscicola milneri              | T (2)     | T (5)             | 0 (0)             | 0 (0)     | 0 (0)            |
| Placobdella montifera          | 0 (0)     | 0 (0)             | 1 (8)             | 0 (0)     | 0 (0)            |
| Placobdella papillifera        | T (2)     | 0 (0)             | 0 (0)             | 0 (0)     | 0 (0)            |

 $a/T = trace (< 0.5/m^2).$ 

In Lake St. Clair in 1983, Helobdella elongata was the most frequently collected (44%) and densest  $(46/m^2)$  of the leeches. Declines in abundance and percent occurrence about equaled increases between 1983 and 1984 for all taxa and locations (Appendix C). Because of the low density of individual species, the group was analyzed in detail as a class.

We identified 36 taxa of Cladocera and Copepoda (Appendix C). Inasmuch as most specimens were too small to be retained by our sieve, their densities reflect their presence rather than their true abundance. Furthermore, many of the taxa represented in our samples are planktonic and were probably entrapped in the Ponar as it descended through the water column. This group includes Diaphanosoma, Holopedium, Leptodora, all Daphnia species, Bosmina, Polyphemus, Limnocalanus, Epischura, Diaptomus, Cyclops, and Mesocyclops. True benthic cladocerans and cyclopoids include Eurycercus, Camptocercus, Alona, Sida, Ilyocryptus, Macrocyclops, Eucyclops, Paracyclops, and the Harpacticoida. Daphnia, Diaptomus, and Bosmina were the most common planktonic taxa and Harpacticoida, Ilyocryptus, Sida, and Macrocyclops the most common benthic taxa.

Other crustaceans common in the system included Ostracoda, <u>Gammarus</u>, <u>Hyalella</u>, <u>Asellus</u>, and <u>Lirceus</u>. Although rare, crayfish and <u>Pontoporeia</u> were taken most frequently in the St. Clair River. Densities of <u>Asellus</u>, and <u>Lirceus</u> are combined and analyzed as Isopoda in the next section.

The terrestrial insects collected with the Ponar included both those that are strictly terrestrial and those that have aquatic early-life stages. They occurred in over 20% of the samples at each location and year and were most common in the St. Clair River. Average densities never exceeded  $12/m^2$ . Densities of most were higher in 1984 than in 1983.

Chironomids were the most common and abundant aquatic insects collected in SCDRS (Table 2). Some genera were collected only as adults and others only as larvae. Seven genera were collected at all five locations (Ablabesmyia, Chironomus. Coelotanypus, Cryptochironomus, Parakieferiella, Polypedilum, and Procladius); three in only the St. Clair River (Chernoskia, Cladotanytarsus, and Paratanytarsus); and four in only the Detroit River (Psectrocladius, Paratricocladius, Lauterborniella, and Acricotopus).

Other Diptera identified from the system included the families Ceratopogonidae, Empididae, Tipulidae, and Psychodidae and the genus Chaoborus (Appendix C). Ceratopogonids were collected at all locations and in both years; densities were highest (>  $14/m^2$ ) in Lake St. Clair and the Detroit River, and were higher in 1984 than in 1983 at most locations. Empidids were common ( $20/m^2$ ) in the upper St. Clair River, not collected in Lake St. Clair, and scarce (<  $7/m^2$ ) elsewhere. Densities were similar in the two years. Psychodids were occasionally collected in both rivers; tipulids and Chaoborus were rare.

Among mayflies, eight genera were collected as nymphs, and three--Cloen,

Table 2. Distribution of genera of Chironomidae and estimated number of species per genus in SCDRS in 1983-84<sup>a/</sup>.

| Genus                       | No. of              |            |          | Locality          |             |       |
|-----------------------------|---------------------|------------|----------|-------------------|-------------|-------|
|                             | species<br>in genus | St. Clair  | Lower    | Lake<br>St. Clair | Upper Upper | River |
|                             | m yenus             |            | Cower    | JC. Clair         |             | LUWE  |
| abesmyia                    | 6                   | -          | _        | -                 | -           | A     |
| icotopus                    | 1                   | , A        | , A.     | •                 | -           | :     |
| rus<br>ronomus              | 1<br>8              | A,L        | A,L      | Ļ                 | A,L         | Ā     |
| novskija                    | ì                   | A,L<br>A,L | A,L      | L                 | A,L         | A     |
| dopelma                     | i                   | 7,6        |          | •                 | Ā           | :     |
| lotanytersus                | Ž                   | A,L        | A,L      | -                 | A,L         | Ã     |
| otanypus                    | 1                   | -          | -        | -                 | Ä           | •     |
| otanypus                    | 2                   | , L        | Ļ        | Ļ                 | A,L         | A,L   |
| hapelopia                   | 1 3                 | A,L        | Ļ        | r                 | :           | -     |
| noneura<br>otopus           | 11                  | L,         | A .      | •                 | Α,          |       |
| tocladopelma                | 2                   | A,L<br>Å   | A,L<br>A | -                 | A,L         | A,L   |
| tochironomus                | •                   | •          | -        | _                 |             | •     |
| <del></del>                 | 6                   | A,L        | A,L      | L                 | A,L         | A,L   |
| totendipes                  | 2                   | Á          | -        | -                 | Á           | Á     |
| cryptoch (ronomus           | 1                   | , A,       | Ą        | -                 | , A,        |       |
| tendipes<br>Idia            | 3                   | A,L        | A        | •                 | A,L         | A,L   |
| cocladius                   | 1                   | A<br>L     | A,L      | ī                 | ī           | •     |
| efferiella                  | i                   | -          | Ä        | -                 | Ä           | _     |
| totendipes                  | Ž                   | A          | -        | -                 | -           | _     |
| ischia                      | 1                   | A          | A        | -                 | L           | A     |
| rotrissociadius             | 1                   | •          | •        | L                 | -           | -     |
| baenus<br>ndinia            | 1                   | Ł          | Ą        | L                 | -           | -     |
| a                           | 1                   | -          | A        | -                 | A           | -     |
| rborniella                  | i                   | -          | 2        | -                 | Ā           | -     |
| phyes                       | · 2                 | A          | Ā        | -                 | -           | Ā     |
| cladius                     | 1                   | Ĺ          | •        | •                 | -           | î     |
| mittia                      | 1                   | Ą          | •        | -                 | A           | -     |
| psectra                     | 3                   | A          | :        | -                 | L           | Α     |
| tendipes<br>Tamesa          | 1                   | -          | Ą        | •                 | -           | -     |
| ladius                      | 4                   | L<br>A.L   | L<br>A,L | <b>-</b>          | L<br>A I    |       |
| hauma                       | • 1                 | 7,5        | 7,1      | -                 | A,L<br>L    | A,L   |
| cladius                     | 4                   | A,L        | A,L      | •                 | Ã           | -     |
| hironomus                   | 6                   | Å          | Á        | -                 | A           | A     |
| cieferriella                | 1                   | A,L        | Ą        | L                 | A,L         | -     |
| auterborniella<br>anytarsus | 1<br>2              | A<br>A     | Ą        | -                 | A           | A     |
| endipes                     | 1                   | <u> </u>   | A        | -                 | ī           | -     |
| richocladius                | i                   | -          | ·        | -                 | -           | Ā     |
| ieura                       | ī                   | A,L        | A        | -                 | -           | Â     |
| opsectra                    | 2                   | Å          | A        | -                 |             | •     |
| éd11um                      | 7                   | A,L        | A,L      | Ļ                 | A,L         | A,L   |
| <u>astia</u><br>adius       | 1<br>2              | L          | Ĺ        | Ļ                 | L.          |       |
| chtronomus                  | 3                   | A,L<br>A,L | A,L<br>L | Ĺ                 | A,L         | A,L   |
| octadius                    | ĭ                   | -          |          | -                 | A,L         | Ā     |
| Smittia                     | ī                   | •          | Ā        | -                 | •           | -     |
| nytarsus                    | 3                   | A,L        | A,L      | -                 | A,L         | A,L   |
| ia .                        | 1                   | Ĺ          | -        | -                 | -           | •     |
| ia<br>Oliva                 | ļ                   |            | A        | - ·               | A           | -     |
| ellina<br>ochironomus       | 1                   | A,L<br>A   | -        | •                 | -           | •     |
| us                          | 1                   | Â          | -        | -                 | A<br>A      | -     |
| arsus                       | ŝ                   | A,L        | A,L      | -                 | A,L         | Ā     |
| emannimyia                  | ī                   | Ä          | -        | -                 | -           | -     |
| los                         | 1                   | A          | -        | -                 | A           |       |
| Tronomus                    | 1                   | _          |          | L                 |             |       |

a/ A = adults; L = larvae.

Ephemera and Stenacron--only as adults (Table 3). Each genus in which species identification was feasible was represented by one species. In the genera Caenis and Tricorythodes, species identification was not feasible. Nymphs of Hexagenia and Caenis occurred at all locations and years, and average abundance sometimes exceeded 300/m². The abundance of Ephemerella, Baetisca, and Stenonema averaged 0-46/m²; these three taxa were collected at all locations with one exception--Ephemerella was not collected in the lower Detroit River. Ephemerella and Stenonema were most abundant in the St. Clair River, and densities of Ephemerella were markedly lower in 1984 than in 1983, whereas the density of Stenonema was higher in 1983 (Appendix C). Baetisca nymphs were most common in the upper Detroit River and were more abundant in 1984 than in 1983. Average densities of Tricorythodes, Brachycercus, and Baetis were usually less than 1/m².

Coleoptera were represented by two families, a few of which were collected only in the St. Clair River. <u>Dubiraphia</u> (Elmidae) was the most abundant genus. <u>Brychius</u> (Haliplidae) was represented by only two specimens.

Lepidoptera larvae were usually identified only to order, but several individuals of the family Pyralidae were identified. Larvae were collected only at river transects, and average densities never exceeded  $5/m^2$  (Appendix C).

Trichoptera of 20 genera were collected as larvae and an additional 8 genera were collected only as adults; one additional taxon, Helicopsyche was recorded as present only by the collection of its unique case (Table 4). Cheumatopsyche and Hydropsyche were the most commonly collected caddisflies in the two rivers and Oecetis was the most abundant caddisfly in Lake St. Clair. Other genera with average densities greater than 13/m² were Brachycentrus and Protoptila, whose distribution was almost exclusively in the St. Clair River, and Polycentropus and Mystacides whose densities were highest in the St. Clair River. Phylocentropus was limited almost exclusively to the upper Detroit River. Of the rarer genera, Micrasema, Phryganea, and Pycnopsyche were collected only in the St. Clair River and Hydroptila, Macrostemum, and Potamyia only in the Detroit River.

Corixidae and Odonata, which are typically found in quiet backwater regions of large rivers, were rarely collected in SCDRS. Damselfly naiads were found only in the lower St. Clair and Detroit rivers (Appendix C). Adult damselflies of the genera <a href="Enallagma">Enallagma</a>, <a href="Ischnura">Ischnura</a>, and <a href="Lestes">Lestes</a> were collected in both rivers (Table 5); a cursory identification of naiads indicated that most belonged of the genus <a href="Enallagma">Enallagma</a>. Dragon fly naiads of the genera <a href="Gomphus">Gomphus</a> and <a href="Stylurus">Stylurus</a> were collected, along with adults of the genera <a href="Anax">Anax</a> and <a href="Tramea">Tramea</a>.

Plecoptera were rare, and limited to samples from the St. Clair River (Appendix C). Two distinct taxa were identified as nymphs--specimens in the family Perlodidae and in the genus <u>Isogenoides</u>. Adults of <u>Perlesta</u> were also collected adjacent to the St. Clair River.

Acarina were collected at all locations and in both years. A few tardigrades were collected in both rivers; densities were highest in the lower Detroit River.

Table 3. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different genera of Ephemeroptera in Ponar grab samples from SCDRS in 1983-84. a/

|                    | ES MI              | Locality                       | and number of s        | amples             | - Program      |
|--------------------|--------------------|--------------------------------|------------------------|--------------------|----------------|
| Genus              | Upper<br>(n = 180) | ir River<br>Lower<br>(n = 180) | St. Clair<br>(n = 108) | Upper<br>(n = 144) | Lower          |
| Baetis             | T (6)              | A                              | 0 (0)                  | T (2)              | A              |
| Baetisca           | 5 (17)             | 6 (15)                         | T (3)                  | 32 (54)            | 6 (31)         |
| Brachycercus       | 0 (0)              | 0 (0)                          | 0 (0)                  | T (4)              | 0 (0)          |
| Caenis             | 96 (50)            | 349 (87)                       | 1 (14)                 | 29 (38)            | 14 (21)        |
| Cloeon             | 0.0                | 0.0                            | 0.0                    | A                  | 0.0            |
| Ephemera           | 0.0                | 0.0                            | 0.0                    | A                  | 0.0            |
| <u>Ephemerella</u> | 32 (31)            | 11 (23)                        | T (3)                  | 1 (6)              | 0 (0)          |
| Hexagenia          | 224 (54)           | 670 (83)                       | 1210 (100)             | 69 (58)            | <b>6 (38</b> ) |
| Stenacron          | A                  | A                              | 0.0                    | A                  | A              |
| Stenonema          | 22 (50)            | 7 (20)                         | T (3)                  | 1 (4)              | 1 (6)          |
| Tricorythodes      | 0 (0)              | T (2)                          | 0 (0)                  | T (2)              | 1 (8)          |

A/A = adult; T = trace (< 0.5/m<sup>2</sup>).

Table 4. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different genera of Trichoptera in Ponar grab samples from SCDRS in 1983-84.4/

| Canna               | No of                         | - EA 191 | Locality a         | and number of sa       | amples !!ehmad     | 11/100             |
|---------------------|-------------------------------|----------|--------------------|------------------------|--------------------|--------------------|
| Genus               | No. of<br>species<br>in genus | Upper    | Lower<br>(n = 180) | St. Clair<br>(n = 108) | Upper<br>(n = 144) | Lower<br>(n = 144) |
| Agraylea            | 1                             | 0 (0)    | 0 (0)              | 0 (0)                  | 0 (0)              | A                  |
| Branchycentrus      | 1                             | 7 (31)   | 23 (33)            | 0 (0)                  | T (2)              | 0 (0)              |
| Ceraclea            | 4                             | 5 (46)   | 13 (42)            | 0 (0)                  | 3 (25)             | 1 (6)              |
| Cheuma topsyche     | 2                             | 113 (77) | 22 (32)            | 3 (6)                  | 700 (75)           | 35 (44)            |
| Helicopsyche        | 1                             | 0 (0)    | s (o)              | 0 (0)                  | 0 (0)              | 0 (0)              |
| Hydropsyche         | 2                             | 108 (85) | 22 (33)            | 0 (0)                  | . 208 (56)         | 33 (48)            |
| <u>Hydroptila</u>   | 1                             | T (4)    | 1 (8)              | 0 (0)                  | T (2)              | 7 (27)             |
| Limnephilus         | 1                             | A        | 0 (0)              | 0 (0)                  | 0 (0)              | 0 (0)              |
| Macrostemum         | 1                             | 0 (0)    | 0 (0)              | 0 (0)                  | 0 (0)              | T (2)              |
| Hicrasema           | 1                             | T (2)    | 1 (5)              | 0 (0)                  | 0 ,(0)             | 0 (0)              |
| <u>Molanna</u>      | 1                             | 0 (0)    | 0 (0)              | 0 (0)                  | A                  | 0 (0)              |
| <u> Mystacides</u>  | 1                             | 5 (29)   | 9 (28)             | T (3)                  | T (2)              | 0 (0)              |
| Nectopsyche         | 2                             | T (6)    | 2 (15)             | 0 (0)                  | T (6)              | T (2)              |
| <u>Meotrichia</u>   | 1                             | a (a)    | 0 (0)              | 0 (0)                  | A                  | 0 (0)              |
| Neureclipsis        | 1                             | 14 (27)  | 21 (30)            | 0 (0)                  | T (4)              | 31 (31)            |
| <u>lyctiophylax</u> | 1                             | 0 (0)    | A                  | 0 (0)                  | 0 (0)              | 0 (0)              |
| Ochrotrichia        | 1                             | 0 (0)    | 0 (0)              | 0 (0)                  | A                  | 0 (0)              |
| <u>Decetis</u>      | 2                             | 13 (33)  | 39 (62)            | 41 (88)                | 14 (33)            | 3 (10)             |
| Orthotrichia        | 1                             | 0 (0)    | T (3)              | 0 (0)                  | T (2)              | 1 (8)              |
| Dxyethira           | 1                             | A        | 0 (0)              | 0 (0)                  | 0 (0)              | A                  |
| Phylocentropus      | 1                             | T (2)    | 0 (0)              | 0 (0)                  | 8 (19)             | 0 (0)              |
| Phryganea           | 1                             | T (2)    | 0 (0)              | 0 (0)                  | 0 (0)              | 0 (0)              |
| Polycentropus       | 2                             | T (6)    | 15 (32)            | 0 (0)                  | T (4)              | 6 (21)             |
| otamyia             | 1                             | 0 (0)    | 0 (0)              | 0 (0)                  | 0 (0)              | T (2)              |
| Protoptila          | 1                             | 17 (19)  | 0 (0)              | 0 (0)                  | T (4)              | A                  |
| Sychomyta           | 1                             | 0 (0)    | 0 (0)              | 0 (0)                  | 0 (0)              | A                  |
| ycnopsyche          | 1                             | 0 (0)    | T (3)              | 0 (0)                  | 0 (0)              | 0 (0)              |
| Setodes             | 1                             | T (8)    | 4 (23)             | 0 (0)                  | T (4)              | 0 (0)              |
| Triaenodes          | 2                             | 2 (10)   | 3 (28)             | 0 (0)                  | T (4)              | T (6)              |

a/A = adult; T = trace (< 0.5/m<sup>2</sup>); S = shell only.

Table 5. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of Odonata in Ponar grab samples from the SCDRS in 1983-84. a/

| •              |                     |                    |                    | ity and number of      |                    |                    |
|----------------|---------------------|--------------------|--------------------|------------------------|--------------------|--------------------|
| Taxon          | No. of              |                    | ir River           | Lake                   |                    | t River            |
|                | species<br>in taxon | Upper<br>(n = 180) | lower<br>(n = 180) | St. Clair<br>(n = 108) | Upper<br>(n = 144) | lower<br>(n = 144) |
| Anax           | 1                   | A                  | 0 (0)              | 0 (0)                  | 0 (0)              | A                  |
| Coenagrionidae |                     | 1 (5)              | 1 (3)              | 0 (0)                  | 0 (0)              | 4 (7)              |
| Enallagma      | 5                   | A                  | 0 (0)              | 0 (0)                  | A                  | A                  |
| Gomphus        | 1                   | A                  | T (1)              | 0 (0)                  | 0 (0)              | T (1)              |
| Ischnura       | 1                   | A                  | 0 (0)              | 0 (0)                  | A                  | A                  |
| Lestes         | 1                   | 0 (0)              | 0 (0)              | 0 (0)                  | 0 (0)              | A                  |
| Stylurus       | 1                   | T (1)              | 0 (0)              | 0 (0)                  | 0 (0)              | 0 (0)              |
| Tramea         | 1                   | 0 (0)              | 0 (0)              | 0 (0)                  | 0 (0)              | A                  |

a/A = adult; T = trace (< 0.5/m<sup>2</sup>).

Gastropods were abundant and diverse in SCDRS. We identified 13 taxa and recorded average densities as high as 578/m² (Table 6). Four of the genera-Amnicola, Elimia, Gyraulus, and Physa--were common throughout SCDRS. Of the other taxa, Valvata was common in the upper St. Clair River and Ferrisia in the lower Detroit River, whereas the average densities of all other species were less than 10/m².

The pelecypods were also diverse in SCDRS, but only fingernail clams were abundant in our collections (Table 7). A standard Ponar dredge is not large enough to effectively sample unionids, whose densities rarely exceed  $1/m^2$  and whose distribution is often clumped. Pisidium was the more common taxon (380/m²) within the Sphaeriidae and occurred more frequently at all locations than Sphaerium (26/m²), which was most common in Lake St. Clair and the upper Detroit River.

In addition to macrozoobenthos, four species of fish, some fish remains, and fish eggs were collected with the Ponar grab mainly from the upper St. Clair River (Appendix C). The fish densities represent 1 specimen per grab and estimated densities of eggs (rainbow smelt) averaged as high as  $46/m^2$ . Egg densities were substantially lower in 1984 than in 1983, but percent occurrence remained stable.

# Major Taxa and Their Distribution

1

An analysis of variance was done on 24 taxonomic groups (e.g. Hexagenia, Oligochaeta) that were chosen to include one to several representative taxa from the various classes of invertebrates found in SCDRS. The ANOVA table associated with each group is in Appendix H. The main effect means (year, month, transect, station) are given in Tables 8-19. Interaction means (e.g., transect x year) for two combinations (transect x station, and transect x year and month) are plotted in Appendix D for each group. These two combinations were chosen because they contained all four effects, the plots were not too complex, and they were of geographic and biological interest. Since many of the interaction terms were significant (Appendix H) the differences in main effect means in Tables 8-19 must be interpreted in light of plots in Appendix D. For example, there is a significant difference in Hexagenia between years (Table 15) but it does not hold consistently over all transects (Figs. 46-47 of Appendix D).

Densities of most taxa were significantly higher in 1983 than in 1984 or showed no difference between years; were significantly higher in October than in May and at the off-channel than at the near-channel or channel station; and were higher in the St. Clair River than elsewhere in SCDRS (Tables 8-19). These results are summarized in Table 20. Of particular interest are the taxa with significantly higher populations in 1983 than in 1984. If the low densities occurred mainly in spring 1984 in the St. Clair River and no recovery occurred by fall 1984, we might postulate that some long-term damage had been caused by the ice jam in May 1984. The densities of taxa listed under 1983 in Table 20, except Manayunkia, were lower in spring in 1984 than in 1983. However,

Table 6. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different taxa of Gastropods in Ponar grab samples from SCDRS in 1983-84. a/

|                             |     | CA PY |         |        |    | er of samp      |     | VIII 2 4      | Diana |                 |
|-----------------------------|-----|-------|---------|--------|----|-----------------|-----|---------------|-------|-----------------|
|                             | Upi | oer   | ir Rivo | ower . |    | Lake<br>. Clair |     | etroit<br>Ser | Rive  | <u>r</u><br>wer |
| Taxon                       |     | 180)  | (n -    |        | (n |                 |     |               | (n =  |                 |
| Amnicola .                  | 578 | (75)  | 548     | (90)   | 33 | (69)            | 203 | (90)          | 93    | (77)            |
| Bithynia                    | 0   | (0)   | 0       | (0)    | T  | (6)             | 1   | (8)           | T     | (2)             |
| Campeloma                   | T   | (2)   | 0       | (0)    | Ţ  | (3)             | T   | (2)           | T     | (4)             |
| Elimia livescens            | 271 | (69)  | 125     | (77)   | 7  | (47)            | 171 | (79)          | 65    | (71)            |
| <u>Ferrisia</u>             | 37  | (23)  | 0       | (0)    | 0  | (0)             | 3   | (17)          | 182   | (58)            |
| <u>Gyraulus</u>             | 51  | (42)  | 124     | (70)   | 28 | (50)            | 52  | (35)          | 28    | (31)            |
| <u>Helisoma</u>             | 0   | (0)   | 0       | (0)    | 0  | (0)             | T   | (2)           | 0     | (0)             |
| Lymnaea                     | 7   | (31)  | T       | (2)    | 0  | (0)             | 1   | (2)           | 0     | (0)             |
| Physa                       | 122 | (67)  | 110     | (80)   | T  | (3)             | 25  | (38)          | 40    | (54)            |
| Pleurocera acuta            | 3   | (8)   | Ť       | (2)    | 2  | (14)            | 10  | (42)          | T     | (4)             |
| Somatogyrus subglobosus     | 0   | (0)   | T       | (2)    | T  | (3)             | 0   | (0)           | 0     | (0)             |
| Valvata sincera             | 2   | (15)  | 1       | (6)    | 2  | (3)             | T   | (2)           | 1     | (6)             |
| <u> Valvata tricarinata</u> | 179 | (31)  | 12      | (44)   | 9  | (42)            | 17  | (6)           | Т     | (6)             |

 $a/T = trace (< 0.5/m^2)$ 

Table 7. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different taxa of Pelecypoda in Ponar grab samples from SCDRS in 1983-84. a/

|                                  | St. CLa            | ir River        | nd number of sam<br>Lake | Detroit            | River              |
|----------------------------------|--------------------|-----------------|--------------------------|--------------------|--------------------|
| Taxon                            | Upper<br>(n = 180) | Lower (n = 180) | St. Clair<br>(n = 108)   | Upper<br>(n = 144) | Lower<br>(n = 144) |
| Anodonta grandis                 | 0 (0)              | 0 (0)           | T (3)                    | 0 (0)              | 0 (0)              |
| Elliptio dilitatus               | 0 (0)              | 0 (0)           | 0 (0)                    | 1 (8)              | 0 (0)              |
| <u>Lampsilis</u> sp.             | 0 (0)              | T (2)           | T (3)                    | 1 (6)              | 0 (0)              |
| Lampsilis radiata<br>siliquoidea | 0 (0)              | 0 (0)           | 1 (8)                    | T (6)              | T (2)              |
| Lampsilis ventricosa             | 0 (0)              | 0 (0)           | 0 (0)                    | T (4)              | 0 (0)              |
| Leptodea fragilis                | 0 (0)              | 0 (0)           | T (3)                    | T (2)              | 0 (0)              |
| <u>Pisidium</u> sp.              | 259 (77)           | 300 (90)        | 671 (100)                | 368 (98)           | 285 (75            |
| Pleurobema cordatum              | 0 (0)              | 0 (0)           | 0 (0)                    | T (4)              | 0 (0)              |
| Proptera alata                   | 0 (0)              | 0 (0)           | T (3)                    | T (2)              | 0 (0)              |
| Ptychobranchus<br>fasciolaria    | 0 (0)              | 0 (0)           | 0 (0)                    | T (2)              | 0 (0)              |
| <u>Sphaerium</u> sp.             | 7 (21)             | 30 (47)         | 30 (89)                  | 62 (75)            | 1 (6)              |
| <u>Truncilla</u> sp.             | 0 (0)              | 0 (0)           | 0 (0)                    | T (2)              | 0 (0)              |
| Truncilla donaciformis           | 0 (0)              | 0 (0)           | 0 (0)                    | T (2)              | 0 (0)              |
| Truncilla truncata               | 0 (0)              | 0 (0)           | 0 (0)                    | 1 (4)              | 0 (0)              |
| Unionidae (juveniles)            | T (4)              | 1 (12)          | 1 (14)                   | 6 (44)             | 0 (0)              |

 $a/T = trace (< 0.5/m^2).$ 

(

jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect Mean density (No./m²) of Hydra and Turbellaria by year, month, station, and transect in SCORS. Adjacent values that are the effect of transformation. Table 8.

| Taxon                                  |                   | Year                   | Month  | <b>s</b>              |                          | Station                 |     |      |                      |            |
|--|-------------------|------------------------|--|-----------------------|--------------------------|-------------------------|-----|------|----------------------|------------|
| Hydra                                  | 12,488            | 3,528<br>1983          | 13,358<br>October  | 2,658<br>Nay          | 10,375<br>Near-channel   | 8,708<br>Channe l       |     | 4 t  | 4,940<br>Off-channel | l _        |
|  |                   |                        | Transect   | اند                   |                          |                         |     |      |                      |            |
| 42,431 36,099 34,826 23,282<br>7 2 5 6 | 4,826 23,282      | 11,824 5,651           | 11,824 5,651 2,064 2,421 2,536 1,546 2,211 1,165 996 482 168<br>4 8 15 16 3 17 10 9 21 20 14 | 1,546 2,211           | 1,165 996 482<br>9 21 20 | 168 181 188<br>14 18 19 | 8 S | 3 12 | \$ II                | <b>~</b> – |
| Turbellaria                            | 372<br>1963       | 185                    | 339<br>October   | 217<br><b>Ha</b> y    | 442<br>Off-channel       | 219<br>Mear-channel     | _   | 5    | 173<br>Channe l      | 1          |
|  |                   |                        | Transect   | انه                   |                          |                         |     |      |                      |            |
| 941 951<br>8 18                        | 408 405 3<br>6 21 | 376 336 495<br>16 2 20 | 355 335 236 266<br>10 9 7 19   | 266 173 117<br>19 5 4 | 7 91 124 52<br>17 15 11  | 61<br>14<br>13          | 22  | 3~   |                      |            |
|  |                   |                        |  |                       |                          |                         |     |      |                      |            |

Mean density (No./m²) of Nemertinea and Nematoda by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ( $P \le 0.05$ ). Ranking and significance are based on ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank rei Table 9.

1

| Station  | 268 243 198<br>Channel Near-channel Off-channel | 3 75 71 21 16 16 3 1 .6<br>3 5 3 6 9 10 13 1 11 | 1018 952 723<br>Mear-channel Off-channel Channel | 641 495 578 402 447 148 160 54 |
|----------|---|---|--|--------------------------------|
| Month    | 85<br>May                                       | 96 125  | 663<br>October                                   | 705 539                        |
| <b>M</b> | 388<br>October                                  | Transect 1 160 124 2 4 16                       | 1133<br>May                                      | Transect<br>758 778 597        |
| Year     | 262<br>1984                                     | 315 206 451                                     | 826<br>1984                                      | 1090 813                       |
| *        | 211   | 383 31  | 969  | 1445 960<br>7 8                |
| Taxon    | Nemertinea                                      | 1080 772 587 461<br>19 21 18 20                 | <b>Nema</b> toda                                 | 2045 2152 1717<br>17 16 20     |

Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation. Mean density (No./m²) of Hirudinea and Oligochaeta by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an ANOVA and Tukey's Table 10.

| October Nay  Transect  8 5 2 2 2 1 9 8 18 13 7 10 10324 6727 Nay October  | Hirudinea       | ,            |                   |                              |                   |                      |         |                      |                    |                |
|---|-----------------|--------------|-------------------|------------------------------|-------------------|----------------------|---------|----------------------|--------------------|----------------|
| 14   17   10   10   8   8   8   5   2   2   2   1     6   17   4   5   12   2   9   8   18   13   7   10  |                 | 1963         | 1984              | 8<br>October                 | A y               | 14<br>0ff-ch         | anne l  | 4<br>Channel         | 4<br>Near-channel  | hanne          |
| 9114 7936 10324 6727<br>1983 1984 Mey October   | 33 14           | 20 50        | 8                 | Transect 5 2 8 18            | 1 1               | 11                   | 9.4     | 21 20 20             | 0-                 | 90 0           |
|   | 01 igochaeta    | 9114<br>1983 | 7936<br>1984      | 10324<br>Nay                 | 6727<br>October   | 11306<br>Off-channel |         | 8482<br>Near-channe] | 5788<br>:1 Channel | 7.             |
| Transect 16383 11551 11297 7311 8939 6169 7663 7916 5888 4965 5179 4654 5021 3148 4665 2414 2320 1845 896 471 18 8 2 11 7 16 19 5 21 6 4 17 9 10 20 12 14 13 15 3 | 1551 11297 7311 |              | 7916 5888<br>5 21 | 7ransect<br>4965 5179<br>6 4 | 4654 5021<br>17 9 |                      | 55 2414 | 2320 18<br>14 1      | 45 896<br>3 15     | 471 334<br>3 1 |

Table 11. Mean density (No./m²) of <u>Manayunkia</u> and Harpacticoida by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an ANOVA and Tukey

| - }  | <b>1</b>      | Taxon       |     |             | Year        | <u>-</u>    |      |                 | Month                     | £    |                | •   |                     | "   | Station              |       |      |                |     |
|------|---------------|-------------|-----|-------------|-------------|-------------|------|-----------------|---------------------------|------|----------------|-----|---------------------|-----|----------------------|-------|------|----------------|-----|
|      | Mand          | Hanayunk ta |     | 1524        | <b>3</b> .0 | 841<br>1984 |      | 1384<br>October | Z 2                       | 3.2  | 982<br>May     | 6   | 1418<br>Off-channel |     | 1137<br>Near-channel | Manne | 1    | 993<br>Channel | 1   |
| 7113 | 3949          | 3800        |     | 2615        | 2129        | 1070        | 1501 | 937             | Fransect<br>421<br>13     | 300  | 269            | 238 | 348<br>18           | 118 | 80                   | 91    | 4.10 | m m            | 2 9 |
|      | Karpacticoida | icoida      |     | 229<br>1983 | <b>a.</b> e | 717         |      | 197<br>May      |                           | 90.5 | 103<br>October | Off | 241<br>Off-channel  |     | 143<br>Near-channel  | anne  | ਤੋਂ  | 65<br>annel    |     |
| 751  | 385           | 312         | 326 | 267         | 240         | 115<br>13   | 98   | 156<br>6        | Transect<br>66 125<br>6 4 | 152  | 78             | 30  | 25.25               | 188 | 22 21 21 21 21       | 01 21 | 0 a  | ~-             | ٠ . |

jointly underlined are not significantly different ( $P \le 0.05$ ). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect Table 12. Mean density (No./m²) of Ostracoda and Isopoda by year, month, station, and transect in SCDRS. Adjacent values that are the effect of transformation.

| ·       | =1                 | 50 0        |                   | 0 12  |
|---------|--------------------|-------------|-------------------|-------|
|         | 91<br>Near-channe  | 77          | S<br>Channel      | 0.5   |
|         | 91<br>Near-cl      | 6           | Cha               | 0 61  |
|         |                    | 19 2        | nnel              | ٥Ξ    |
| اه.     | 273<br>Channe l    | 7 1         | 6<br>Near-channel | 0 2   |
| Station | 피                  | 48          | 2                 |       |
|         | inne]              | 20          | 3<br>Inne?        | 0.0   |
|         | 204<br>Off-channel | 6 8         | 63<br>Off-channel | 150   |
|         |                    | % &    <br> |                   | 130   |
|         | 79<br>October      | z-          | 23<br>October     | 9.81  |
| Month   |                    |             | 1                 | 922   |
| Mor     | 0 >                | 79 56       | ~ 🖈               | 2 1 3 |
|         | 300<br>Nay         | FI 82       | 72 A              | N-4   |
|         |                    | 82          |                   | 62    |
|         | 101<br>1983        | 26          | 14<br>1984        | ~~    |
| 1.      | 1                  | 9 5         |                   | 10    |
| Year    | 87                 | 134         |                   | 202   |
|         | 278<br>1984        |             | 36<br>1983        | 16 28 |
|         |                    | 153         |                   | 32    |
|         | <b>4</b>           | 279         | _                 | 6     |
| Taxon   | 0s tracoda         | 1707        | Isopoda           | 8     |
|         |                    | 1047        |                   | 192   |
|         |                    |             |                   |       |

| 1983   1984   October   182   1838   423   185   185   185   185   185   185   185   185   185   185   185   185   185   187 | Same arus   512   452   741   223   838   838   1984   October   May   Off-channel   1983   1984   October   May   Off-channel   1417   1054   1182   1267   720   510   340   548   470   298   206   153   106   15   | 1                         |
|--|---|---------------------------|
| 1417   1054   1182   1267   720   510   340   548   470   298   206   153   106   69   37   23   20   20   14   1   1   1   1   1   1   1   1  | 1417   1054   1182   1267   720   510   340   548   470   298   206   153   106   154   105   154   105   154   105   154   105   154   105   154   105   154   105   154   105   154   105   154   105   154   105   154   105   154   105 |                           |
| Hyaletia 105 67 85 87 164 51 43  1983 184 0ctober May Off-channel Near-channel Channel  Fransect  515 243 145 78 83 79 68 4 30 34 16 9 8 6 2 6 6 0 0  9 8 6 2 7 4 20 0 5 18 17 14 3 21 11 1 13 12 19   | Hyalella 105 57 85 87 87 85 87 87 95 97 95 97 95 97 95 97 95 97 9 68 4 30 34 16 9 9 9 9 8 6 2 7 4 20 0 5 18 17 14   | 23 20 20 14<br>19 21 14 1 |
| 515 243 145 78 83 79 68 4 30 34 16 9 8 6 2 .6 .6 0 0 9 8 6 2 7 4 20 0 5 18 17 14 3 21 11 1 13 12 19  | 515 243 145 78 83 79 68 4 30 34 16 9 8<br>9 8 6 2 7 4 20 0 5 18 17 14 3   |                           |
|  |   | .6 .6 0 0<br>1 13 12 19   |
|  |   |                           |

jointly underlined are not significantly different ( $P \le 0.05$ ). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation. Table 14. Mean density (No./m²) of Chironomidae and Oecetis by year, month, station, and transect in SCORS. Adjacent values that are

|           |              |            |      |            |      |          |      |    | •           | Tont  |                 |          |         |                     | 25  | Station         |                      |       |                 |                |
|-----------|--------------|------------|------|------------|------|----------|------|----|-------------|-------|-----------------|----------|---------|---------------------|-----|-----------------|----------------------|-------|-----------------|----------------|
|           | Chironomidae | idae       |      | 2174       |      | 1322     |      | 2  | 2137<br>Hay |       | 1359<br>October |          | Off-    | 2409<br>Off-channel |     | 1542<br>ear-chu | 1542<br>Near-channel | 22 25 | 1292<br>Channel |                |
|           |              |            |      |            |      |          |      |    | Transect    | ic    |                 |          |         |                     |     |                 |                      |       |                 |                |
| 5261<br>6 | 4867<br>8    | 3439       | 3445 | 2593       | 2514 | 2876     | 2566 | ,1 | 1745        | 113   | 751             | 33       | 853 663 | 13                  | 1 1 | 1306            | 14 2                 | 20 2  | 18 21           | 21 19          |
|           | 0ecet is     |            | -    | 26<br>1983 |      | 17       |      |    | 23<br>Nay   |       | 20<br>October   | <b>5</b> | Off-    | 44<br>Off-channel   |     | 14<br>ear-cha   | Ě                    | 3     | 7<br>I Channel  |                |
|           |              |            |      |            |      |          |      |    | Transect    | 벍     |                 |          |         |                     |     |                 |                      |       |                 |                |
| 118       | 13 46        | <b>4</b> 2 | 36   | 8<br>6     | 55   | 53<br>19 | 22   | 20 | 20          | o, eo | 15              | 21       | 2 6     | m 04                | ~ 4 | 7 -             | - e                  | 0 8   | ٥2              | 0 <del>7</del> |

jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect Mean density (No./m²) of Caenis and Hexagenia by year, month, station, and transect in SCDRS. Adjacent values that are the effect of transformation. Table 15.

| Caenis         115         105         122         97         223         72         34           540         266         194         169         136         93         75         121         41         28         14         13         2         1         1         6         6         6         6         16         16         135         93         75         121         41         28         14         13         2         1         1         6         | 7                | Taxon  |                | 7    | Year      |             |    |               | Month      | <b>.</b>  |          |    |      |               | VI      | Station       | e    |    |             |          |
|---|------------------|--------|----------------|------|-----------|-------------|----|---------------|------------|-----------|----------|----|------|---------------|---------|---------------|------|----|-------------|----------|
| Fransect           540         266         194         169         135         93         75         121         41         28         14         13         2         1         1         6         8         3         3         1           Hexagenia         1964         1983         0ctober         5         7         10         4         17         2         14         15         19         21         18         8         6         6         5         3         3<                    | 3                | nis    | <del>=</del> 1 | 115  |           | 105         |    | 122<br>Octobe |            | _ Z       | 9. y     |    | Off- | 223<br>channe | į       | 72<br>ar-ch   | Inne | 5  | me ]        |          |
| 540         266         194         169         135         93         75         121         41         28         14         13         2         1         1         6         6         6         6         6         6         15         17         19         11         21         3         13         15         18         20         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         4 |                  |        |                |      |           |             |    | 티             | ansec      | <b>+1</b> |          |    |      |               |         |               |      |    |             |          |
| Hexagenia         488         290         544         235         420         370         378           1984         1983         October         May         Channel         Off-channel         Near-channel           Transect           1214         1126         1502         1059         640         222         425         200         142         231         52         21         17         8         8         6         6         5         3           13         11         6         8         5         7         10         16         9         4         17         2         14         15         19         21         18         20         3   | 9                |        | <u>4</u> 6     | 169  | 135<br>10 | 88          | 75 |               | <b>4</b> 1 |           |          |    | 13   | 2<br>11       | 12      |               |      |    |             |          |
| Transect       1214     1126     1502     1059     640     222     425     200     142     231     52     21     17     8     8     6     6     5     3       13     11     6     8     5     7     10     16     9     4     17     2     14     15     19     21     18     20     3  | ¥                | agenia | 7 24           | 88.4 | -         | 290<br>1983 |    | 544<br>Octobe | L          | % ≇       | 35<br>ay |    | 5    | 420<br>anne l | 1       | 370<br>-chani |      | 37 | 78<br>Chann | <b>=</b> |
| 1214 1126 1502 1059 640 222 425 200 142 231 52 21 17 8 8 6 6 5 3 13 13 11 6 8 5 7 10 16 9 4 17 2 14 15 19 21 18 20 3  |                  |        |                |      |           |             |    | 티             | ansec      | int.      |          |    |      |               |         |               |      |    |             |          |
|   | 1290 12<br>12 13 | ĺ      |                |      |           | - 1         |    |               |            |           | 231      | 52 | 23   | 71            | 8<br>15 |               |      |    | ကဗ္ထ        | m m      |

are jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect Mean density (No./m²) of <u>Cheumatopsyche</u> and <u>Hydropsyche</u> by year, month, station, and transect in SCDRS. Adjacent values that the effect of transformation. Table 16.

The second second

| 1984   1983   0ctober   May   Near-channel   Channel   Off-channel   O |                |             | Year |            |     |               | Month          |           |      |     | Ì              | 22          | Station      |            |             |       |     |
|--|----------------|-------------|------|------------|-----|---------------|----------------|-----------|------|-----|----------------|-------------|--------------|------------|-------------|-------|-----|
| Transect  1 99 136 92 59 29 42 32 16 8 3 3 3 2 2 2 6 6 0  7 14 20 5 4 21 16 3 13 9 18 6 8 19 10 11 1  108 45 131 23 113 74 44  1984 1983 October May Off-channel Channel Near-channel  208 115 88 61 78 45 39 15 10 5 5 3 2 1 0 0 0  14 3 7 4 20 21 17 6 16 19 18 8 10 9 1 12 13   | Cheumatopsyche | 221<br>1984 | Ä    | 124<br>983 |     | 298<br>Octobe | Ŀ.             | # # y     | -    | Kea | 246<br>r-chani | Ę.          | 192<br>Chann |            | 79<br>Off-c | hanne | _   |
| 108 45 131 23 113 74 44 1984 1983 October May Off-channel Channel Mear-channel  Transect  208 115 88 61 78 45 39 15 10 5 5 3 2 1 0 0 0 14 3 7 4 20 21 17 6 16 19 18 8 10 9 1 12 13   | 127            |             | 500  | 85 ez      | 2   |               | 32<br>32<br>16 |           | 8 22 | m Ø | 18 3           | e 90        | <b>[</b>     | ļ          |             | 9:1   | 2   |
| 208 115 88 61 78 45 39 15 10 5 5 3 2 1 0 0 0 14 3 7 4 20 21 17 6 16 19 18 8 10 9 1 12 13   | Hydropsyche    | 108         | ä    | 983        |     | 131<br>Octobe | Ë              | 23<br>May | _    | 9   | 113<br>chann   | <u> </u>    | 74<br>Chann  |            | Hear-c      | hanne | - 1 |
|  | 55             |             | 1    | 61         | 208 |               | 39<br>17       |           | 92   | 19  | 28             | m <b>co</b> | 2<br>10      | <b>⊸ 6</b> |             | ·     |     |

Table 17. Mean density (No./m²) of Acarina and Sphaeriidae by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ( $P \le 0.05$ ). Ranking and significance are based on an ANOVA and Tukey's

(

|             | Taxon            |      |      | Year | <b>.</b> |            |     |                  | Month               | £             |          |           |                   | St         | Station            |        |                |     |     |
|-------------|------------------|------|------|------|----------|------------|-----|------------------|---------------------|---------------|----------|-----------|-------------------|------------|--------------------|--------|----------------|-----|-----|
|             | Acarina          |      | 3961 |      | 51       | 38         |     | <b>6 3</b>       |                     | 43<br>October | <b>\</b> | 51        | 55<br>Off-channel | - <u>E</u> | 37<br>Near-channel | hannel | 33<br>Channel  | 2   |     |
| 81.2<br>2.2 | 115 106          | 85 2 | 19   | 99   | 89       | 37         | 10  | 111              | 7ransect 27 26 14 8 | 24            | 27       | 86        | 411               | 14         | 112                | 13     | æ۳             | 751 | 1   |
|             | Sphaeriidae      | •    | 372  |      | 365      | <br>  <br> |     | 403<br>October   |                     | 334<br>May    |          | <br>      | 438<br>Off-chane  | <u> </u>   | Mear-channel       |        | 316<br>Channel | _   | 1   |
| 983         | 584 537<br>12 13 | 519  | 473  | 532  | \$-      | ۲۱<br>څخ   | 359 | 771<br>371<br>16 | Transect            | 360           | 349<br>5 | 278<br>10 | 320<br>19         | 218<br>18  | 142                |        | 239            | 52  | £ e |

Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of Table 18. Mean density (No./m²) of  $\frac{physa}{ptotolog}$  and  $\frac{syraulus}{station}$  by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an ANOVA and Tukey's Studentized transformation.

| •        | Physa             |         | 65<br>1984 |    | 58<br>1983 |          | 900 | 89<br>October | %<br>₹ |           | 044      | 115<br>Off-channel | 1  | 52<br>Near-channel | ine i  | ੋਂ ਤੌ | 18<br>Channel |     |
|----------|-------------------|---------|------------|----|------------|----------|-----|---------------|--------|-----------|----------|--------------------|----|--------------------|--------|-------|---------------|-----|
|          |                   |         |            |    |            |          | FI  | Transect      | ادم    |           |          |                    |    |                    |        |       |               |     |
| 280      | 183 141           | 4       | 27         | 28 | 8~         | 16       | 20  | 250           | ×2     | <b>32</b> | 212      | 12 13              | 87 | ~~                 | 15 1   | 9.0   | 130           | 011 |
|          | Guran Jus         |         | 5          |    | 9          |          |     |               | 5      |           |          | 86.                |    | 23                 |        | _     | ~             |     |
| <b>3</b> |                   |         | 1983       |    | 1964       |          | 95. | October       | F Val  |           | 95       | Off-channel        |    | Near-channel       | ] June | 5     | Channel       |     |
|          |                   |         |            |    |            |          | ĒΙ  | Transect      | ابم    |           |          |                    |    |                    |        |       |               |     |
| 236 16   | 162 · 158<br>16 4 | 158 104 | <b>₹</b> ® | 20 | 62         | 69<br>18 | 12  | 35            | 85 æ   | 28.33     | 24<br>15 | 22                 | == | <b>.</b> ~         | 7 = 1  | 5 6   | 212           | ~ e |

jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an AMOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect Mean density (No./m²) of Amnicola and Elimia by year, month, station, and transect in SCDRS. Adjacent values that are the effect of transformation. Table 19.

|   | ‡                    |            | Year         | Year                 |
|---|----------------------|------------|--------------|----------------------|
| Transect   336   148   103   109   80   81   42   44   40   13   13   13   14   12   13   18   11   1   1   1   1   1   1   1               | 327 2<br>October M   | のま         | 228<br>1984  | 377 22<br>1983 198   |
| 147 108 154 130 99 October May Near-channel Off-channel Channel  Transect 176 57 74 57 44 18 15 22 9 8 6 6 3 19 17 8 10 21 9 16 13 11 12 18 | 386<br>9             | 10 10      | 5.           |                      |
| Transect 176 57 74 57 44 18 15 22 9 8 6 6 3 19 17 8 10 21 9 16 13 11 12 18  |                      |            | 126          | 129 126<br>1984 1983 |
|   | Transect 176 57 3 19 | <b>=</b> _ | 245 181 5 20 |                      |

Table 20. Summary of ANOVA results in tables 8-19 of mean density on 24 abundant taxa collected in the SCDRS in 1983 and 1984. Placement indicates significantly higher (P ≤ 0.05) abundance at a particular time or location. Taxa placement in station and location categories were based on overall ranking regardless of significance; in the case of location, the cutoff was arbitrary.

|  | YEAR   |   |  | MONTH  |   |
|--|--|---|--|--|---|
| 19831/   | 19841/   | Nonsignificant  | May <sup>1/</sup>  | October 1/   | Nonsignificant  |
| Amnicola<br>Chironomidae<br>Gammarus<br>Harpacticoida<br>Hyalella<br>Isopoda<br>Manayunkia<br>Nematoda<br>Oecetis<br>Turbellaria   | Cheumatopsyche Hexagenia Hydra Hydropsyche Ustracoda       | Acarina Caenis Elimia Gyraulus Hirudinea Nemertinea Oligochaeta Physa Sphaeriidae | Acarina<br>Chironomidae<br>Harpacticoida<br>Isopoda<br>Nematoda<br>Oligochaeta<br>Ostracoda  | Amnicola Caenis Cheumatopsyc Elimia Gammarus Gyraulus Hexagenia Hirudinea Hyalella Hydra Hydra Hydropsyche Manayunkia Memertinea Physa Sphaeriidae Turbellaria | <u>Oecetis</u>  |
|  | STATION  |   |  | LOCAT  | ION   |
| Off-channel  | Near-channel   | Channe 1  | St. Clair R.<br>(Transects<br>1-10)  | Lake<br>St. Clair<br>(Transects<br>11-13)  | Detroit River<br>(Transects<br>14-21)   |
| Acarina Amnicola Caenis Chironomidae Gammarus Gyraulus Harpacticoida Hexagenia Hirudinea Hyalella Hydropsyche Isopoda Manayunkia Oecetis Oligochaeta Ostracoda Physa Sphaeriidae Turbellaria | Cheumatopsyche<br>Elimia<br>Hexagenia<br>Hydra<br>Nematoda | Cheumatopsyche<br>Hexagenia<br>Nemertinea   | Acarina Ammicola Caenis Chironomidae Elimia Gammarus Gyraulus Hirudinea Hyalella Hydra Isopoda Oecetis Oligochaeta Physa Turbellaria | Hexagenia<br>Hirudinea<br>Nematoda<br>Oecetis<br>Sphaeriidae   | Acarina Cheumatopsyche ETimia Harpacticoida Hyalella Hydropsyche Manayunkia Nematoda Nemertinea Oligochaeta Ostracoda Turbellaria |

<sup>1/</sup> Significantly greater density.

this lower density in spring occurred only in the St. Clair River, and was most obvious in the delta region (transects VII-X). Densities of Nematoda, Isopoda, Gammarus, Hyalella, Chironomidae, and Oecetis in the affected area had recovered by fall 1984 to levels equal to or exceeding those in fall 1983, though densities of Turbellaria, Harpacticoida, and Amnicola were still low in fall 1984 (Figs. 5, 23, 35, and 68 of Appendix D).

Variability in yearly trends of mean density in relation to month can be illustrated by Hydra population densities. Numbers in spring were consistently higher in 1983 than in 1984 (Fig. 1 of Appendix D), but the reverse was true in the fall (Fig. 2 in Appendix D). This difference also occurred in Oligochaeta, Chironomidae, Caenis, Acarina, and Sphaeriidae. Variation in yearly trends by transect and month are shown in Hexagenia densities in Figs. 46 and 47 of Appendix D. Other taxa were more consistent, although all vary somewhat over the 21 transects and two sampling periods.

Densities of most taxa were significantly higher in October than in May (Table 20). The differences in seasonal abundance were fairly consistent over years and transects, because many of the interaction means associated with month were nonsignificant (e.g., Hirudinea, Cheumatopsyche in Appendix H). The exceptions were Hydra, which typically was most common in October, though its density was rather high in the Detroit River in May 1984 (Fig. 1 of Appendix D). Densities of Ostracoda were high in the St. Clair River in October, whereas they are typically highest in May (Fig. 25 of Appendix D). Similarly, departures from seasonal abundance trends resulting from unusually high densities in a particular year or area (transect) occurred also in Hexagenia, Gyraulus, and Elimia.

Densities of most taxa were significantly higher at the off-channel station that at either the near-channel or channel stations (Table 20). Densities of Acarina, Hydropsyche, Cheumatopsyche, and Hexagenia were not significantly different between at least two stations (Tables 15, 16, 17); consequently these taxa were listed at stations where their densities were highest. In addition, the abundance of several taxa at a particular station (depth) was not consistent over all transects. The depth distributions of Hirudinea, Oligochaeta, Chironomidae, Sphaeriidae, and Amnicola differed in lake and riverine situations, and those of Manayunkia, Acarina, and Elimia differed between the lower Detroit River and the rest of the system. Contaminant problems may override depth distribution in this area. These and other minor differences in distribution among stations probably reflect a preference for a sediment type.

Most taxa were most abundant in the St. Clair River (Table 20). Listing a particular taxon in a particular location was somewhat subjective because of ranking between locations overlapped considerably. For example, densities of Hydra were consistently high in the St. Clair River, whereas those of Turbellaria were equally high in the St. Clair and Detroit rivers (Table 8). If distribution differences were not clear cut, a particular taxon was listed in more than one location. Taxa most abundant in the St. Clair River were

mostly insects and snails. The number of taxa whose highest densities were in Lake St. Clair were few, and were characteristic of lotic situations. The Detroit River was dominated by lower invertebrate taxa (worms) and net-spinning caddisflies.

### Biomass

Mean biomass ranged from 0.03 to 4.84 g/m² over the 21 transects (Table 21). Biomass was higher in 1984 than in 1983 along about half the transects; there were no statistically significant differences between years (Table 22 and Appendix H). Biomass was 25% lower in May, but 60% higher in October, in 1984 than in 1983. This reversal resulted in no statistically significant differences between May and October (Table 22). Biomass in May was lower in 1984 than in 1983 at most St. Clair River transects, but the opposite was true in the Detroit River. However, most biomass values for October were higher in 1984 than in 1983, over all transects (Figs. 73-74 in Appendix D). Differences between stations were significant, and relationships did not vary by month or year and were fairly consistent over transects (Fig. 75 of Appendix D). Biomass was highest in the Russell Island area and Belle Isle (Table 21) and lowest at transect I in Lake Huron.

Clams, crayfish, and fish remains were rarely collected but contributed considerably to biomass estimates. Because of the great variability they introduced, they were not included in the ANOVA (Table 22 and Appendix H). Clams were most common in Lake St. Clair and the Detroit River--particularly at transect XVI, where biomass estimates were as high as  $2.6~\mathrm{g/m^2}$ .

# Density and Diversity

Average total densities of macrozoobenthos ranged from 976 to  $96,684/m^2$  over the 21 transects in the two years (Table 21). Total densities were higher along about half the transects, and lower along the other half, in 1984 than in 1983. Densities were not necessarily positively correlated with biomass calculated at the same stations (Table 21). Densities were highest at transects XVIII (due mainly to oligochaetes) and VII (which had a diverse community—an average of 36 taxa per sampling period).

The average number of taxa at each transect ranged from 9 to 38 (Table 21). Diversity was consistently higher in 1983 than in 1984 in the St. Clair River but did not differ between years in the Detroit River. On the average, there were four fewer taxa in 1984 than in 1983 in the St. Clair River. The number of taxa was lowest (9-13) in the sandy substrates of transect I (Lake Huron) and high (>30) at II-VIII and at XVII (Belle Isle). The number of taxa per sample averaged 22 in the lower Detroit River.

### Physical Characteristics of the River

The physical environment varied among transects (see Appendix G for summary). Current velocities and substrates differed among segments of SCDRS: upper St.

Table 21. Mean total density, biomass (ash-free dry weight) and average number of taxa (diversity) of macrozoobenthos collected in SCDRS, May and October, 1983-1984.

|          | <br>  Dencity | (no./m²) | Bioma | ss (q/m²) | Dive<br>(no. o | rsity<br>f taxa) |
|----------|---------------|----------|-------|-----------|----------------|------------------|
| Transect | 1983          | 1984     | 1983  | 1984      | 1983           | 1984             |
| I        | 2,504         | 976      | 0.24  | 0.03      | 13             | 9                |
| 11       | 24,622        | 87,430   | 1.16  | 2.27      | 38             | 37               |
| III      | 7,837         | 2,555    | 0.22  | 0.12      | 22             | 18               |
| IV       | 15,190        | 34,659   | 0.79  | 1.78      | 32             | 32               |
| V        | 14,361        | 87,481   | 1.33  | 2.47      | 32             | 29               |
| VI       | 34,814        | 47,042   | 2.47  | 2.13      | 38             | 32               |
| VII      | 31,533        | 90,107   | 2.82  | 3.31      | 36             | 32               |
| VIII     | 43,294        | 23,176   | 1.56  | 0.91      | 34             | 31               |
| IX       | 25,470        | 6,260    | 1.02  | 0.21      | 34             | 23               |
| X        | 13,103        | 10,113   | 0.55  | 0.41      | 26             | 23               |
| XI       | 13,956        | 15,391   | 1.68  | 1.08      | 24             | 21               |
| XII      | 8,090         | 7,474    | 1.25  | 1.67      | 22             | 22               |
| XIII     | 7,184         | 5,514    | 0.91  | 1.85      | 22             | 22               |
| VIV      | 9,054         | 113      | 0.55  | 1.75      | 23             | 22               |
| XV       | 11,040        | 8,020    | 0.92  | 1.43      | 21             | 23               |
| XVI      | 20,325        | 17,802   | 4.20  | 4.84      | 34             | 32               |
| XVII     | 22,545        | 16,313   | 1.18  | 0.82      | 28             | 30               |
| XVIII    | 98,684        | 63,073   | 1.35  | 1.37      | 25             | 21               |
| XIX      | 13,661        | 15,938   | 0.42  | 0.89      | 20             | 22               |
| XX       | 11,154        | 8,983    | 0.34  | 0.34      | 22             | 25               |
| IXX      | 11,277        | 14,608   | 0.92  | 0.31      | 21             | . 22             |
| Mean     | 20,938        | 26,811   | 1.23  | 1.43      | 27             | 25               |

}

Table 22. Ash-free dry weight mean biomass (g/m²) of macrozoobenthos by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different (P < 0.05). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of untransformed data. Large clams, crayfish, and fish remains are not included in the analysis.

|          |                       | <b>5</b> - 1   |
|----------|-----------------------|--|
|          | 0.71<br>Channel       | Transects 1.24 1.19 1.16 1.10 1.10 1.00 0.84 0.81 0.70 0.66 0.61 0.48 0.45 0.34 0.17 0.14 8 18 15 13 16 4 14 12 17 19 9 10 21 20 3 1 |
|          | i                     | 20 20  |
| Stations | 1.00<br>Near-channel  | 21 21  |
| Sta      | Near<br>Near          | 10.48  |
|          | 1.43<br>Off-channel N | 0.6  |
|          | 1.4<br>Off-c          | 61   |
|          |                       | 2 0.7  |
|          | 1.03<br>October       | 20.0   |
| th       | 0                     | cts 000 0.   |
| Month    | 6.2                   | Transects<br>10 1.00   |
|          | 1.07<br>Nay           | 13 13  |
|          |                       | 1.16   |
|          | 1.00                  | 1.19   |
| Year     |                       | 9.54   |
|          | 1984                  | 11.35  |
|          | ·                     | 1.41   |
|          | <b>S</b>              | 5.3  |
|          | Biomass               | 3.07 2.30 1.90 1.41 1.35<br>7 6 5 2 11   |
|          |                       | 3.07   |
|          |                       |  |

Clair River, sometimes >2 ft/s, mostly gravel; lower St. Clair River, never >2 ft/s, predominantly sand and silt; Lake St. Clair, rarely >0.6 ft/s, cohesive clay and silt; upper Detroit River and portions of the lower river, usually <1 ft/s, unconsolidated clay and silt; and other transects in the lower Detroit River (XX-XXI), with >1 ft/s and mainly gravel and cobble. Sampling depth ranged from 4 to 25 ft in the rivers, but varied little in Lake St. Clair, averaging 22 ft.

Water temperature varied between locations, seasons, and years during the study. Contemporaneous differences of up to 7°F occurred routinely between Port Huron and the lower Detroit River. These differences were greatest in spring and smallest in fall, and averaged about 4°F for the year. Temperatures ranged from 39° to 46°F in early May and from 57° to 59°F in October. Daily temperatures for both years were available from the water plants operated by the City of Port Huron (in the river adjacent to the city) and Detroit (Detroit River at Belle Isle). The average monthly temperatures are plotted in Fig. 5. Both rivers reached maximum temperature in August; temperatures were consistently lower in 1984 than in 1983--particularly in the St. Clair River in March, April, and May, where low temperatures were presumably caused by the large ice jam previously described. Differences between surface and bottom temperatures were always less than 2°F.

## Relationships between Macrozoobenthos and Physical Environment

The relation between depth, velocity, bottom type, and temperature and the abundance of 24 taxa was limited mainly to significant correlations with depth and velocity (Table 23). Increasing depth was correlated with increasing current velocity and coarser or firmer substrates. However, it was difficult to determine which of these physical factors most influenced the abundance of macrozoobenthos. The abundance of all of the taxa listed in Table 23 except Hydropsyche and Cheumatopsyche were negatively correlated (P < 0.05) with depth and velocity. Most of the taxa listed in Table 23 were significantly denser at the off-channel stations than at others (Table 20). Turbellaria, Hirudinea, Oligochaeta, Gammarus, Hyalella, Chironomidae, Caenis, Physa, Gyraulus, and Amnicola were consistently most abundant in shallow areas with little current. The depth distribution of certain other taxa may have been unique, but the relation was not linear.

Although water velocity was related to bottom type, a linear relation with sediment type was significant for only one taxon--densities of Hydropsyche were highest in coarse sediments. Other significant positive relations were shown by Hydropsyche and Cheumatopsyche (with water velocity) and Physa (with temperature). Few correlations with temperature would be expected because temperature differences both vertically and cross channel were small, and the sampling periods were widely separated.

#### AQUATIC MACROPHYTES

#### Distribution of Submersed Plants

We collected 20 taxa of submersed macrophytes with the Ponar grab in the

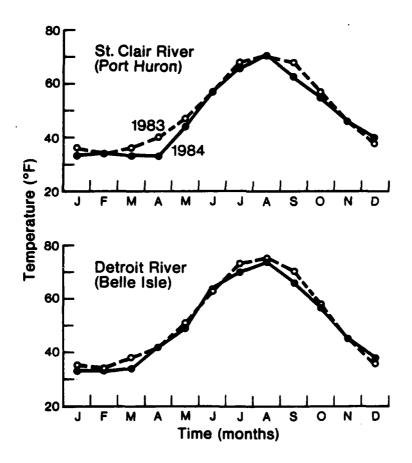


Figure 5. Mean monthly water temperatures (°F) measured in the St. Clair and Detroit rivers at the city of Port Huron water intake (1.5 miles below the Blue Water Bridge) and at the city of Detroit water intake (Belle Isle) in 1983 and 1984.

Table 23. Significant correlation coefficients ( $P \le 0.05$ , n = 756) for macrozoobenthos density (by taxon) and: water depth, velocity, temperature, and bottom type.

| Taxon           | Depth  | Velocity | Temperature | Bottom type |
|-----------------|--------|----------|-------------|-------------|
| Turbellaria     | -0.253 | -0.308   | •           | -           |
| Hirudinea       | -0.255 | -0.259   | -           | -           |
| 01 igochaeta    | -0.222 | -0.329   | -           | -           |
| <u>Bammarus</u> | -      | -0.243   | -           | -           |
| <u>Hyalella</u> | -      | -0.180   | -           | -           |
| Chironomidae    | -0.301 | -0.349   | •           | -           |
| Caenis          | -0.261 | -0.305   | -           | -           |
| Hexagenia       | •      | -0.286   | -           | -           |
| Cheumatopsyche  | -      | +0.248   | -           | •           |
| Hydropsyche     | •      | +0.243   | -           | +0.164      |
| Physa           | -0.263 | -0.265   | +0.224      | -           |
| <u>Gyraulus</u> | -0.255 | -0.230   | -           | -           |
| Amnicola        | -0.311 | -0.269   | -           | -           |

St. Clair and Detroit rivers in 1983 and 1984 (Table 24). The St. Clair River yielded 18 submersed taxa plus 1 emergent species, Sagittaria sp., that was found in the submersed stage; and the Detroit River collections contained 19 taxa including 2 emergent species that were found in their submersed forms. The most common submersed plants in decreasing order of frequency of occurrence, were Chara spp., Potamogeton spp., Vallisneria americana, Potamogeton gramineus, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis. Other taxa occurred in less than 13% of the samples. The most common taxa collected were Chara in the St. Clair River and V. americana in the Detroit River. The frequency of occurrence of Potamogeton spp. was similar in both rivers; P. richardsonii, E. canadensis, and P. gramineus were more common in the St. Clair River and M. spicatum was more common in the Detroit River. Butomus umbellatus and Ranunculus longirostris were collected only in the Detroit River and Zannichellia palustris only in the St. Clair River. Variation in frequency of occurrence of individual taxa between years was 7% or less in both rivers.

The number of plant taxa generally increased from spring to late summer as Najas flexilis, Nitellopsis obtusa, and P. zosteriformis appeared in July-August (Tables 25-27). One taxon, P. crispus, declined in occurrence as the season progressed. Total number of taxa at each location varied from 7 to 14, the largest number occurring in September. The plant collections were only slightly more diverse at Stag Island and Belle Isle (mean of 11 taxa) than at Point Hennepin, where the diversity was lowest (mean of 8 taxa). Percent occurrence of individual taxa during each sampling period varied less than 10% between years, at each location. Only 11 of 228 comparisons (by year, month, and island) showed changes in occurrence of taxa that exceeded 20%. Changes were about equally divided between the St. Clair and Detroit rivers and occurred most frequently in July. Incidence of variation (> 10%) in percent occurrence between years, was highest in Potamogeton spp., P. richardsonii, E. canadensis, and Vallisneria americana.

The diversity of taxa and distribution of plants were unique at each location. At Stag Island, plants were lacking in blocks 1-4 and sparse in block 5 (Figs. 1-3 and 19-21 of Appendix 0). Plants also appeared to be absent in parts of blocks 6-9 and 13, and in shallow areas in blocks 8, 10, and 11. Most plants were located in and near an area with depths up to 20 ft that was centered on grid intersect 17 and along the shipping channel. spp., Potamogeton spp., and P. richardsonii occurred in relatively high concentrations--> 10 g/m<sup>2</sup> in June, > 20 in July, and > 40 in September--in all blocks below the upstream tip of the island. Chara spp. occurred most often in pure stands, particularly in shallow areas adjacent to Stag Island. Potamogeton richardsonii, Elodea canadensis and P. crispus were the dominant plants composing the dark band around deep water in grids 6-9 and 11-12 (e.g., see Fig. 2 of Appendix 0). Myriophyllum spicatum and Najas flexilis dominated the deeper water in both these areas. Potamogeton gramineus was the dominant taxon in the deeper areas near the shipping channel. Potamogeton spp. was interspersed throughout the communities and was the dominant taxon in the lighter areas near the shipping channel. Diversity was greatest in areas where light and dark patches converged. Six to eight taxa were often found in

Table 24. Percent frequency of occurrence and mean dry weight biomass  $(g/m^2)$  of submersed macrophyte taxa collected with a Ponar grab in SCDRS in 1983 and 1984. Mean biomass is based only on samples in which the taxa occurred.

|                                     |       |               | air River      | <b>-</b>                              |               | Detroit       | River               |                 |
|-------------------------------------|-------|---------------|----------------|---------------------------------------|---------------|---------------|---------------------|-----------------|
| Taxa                                | 0ccur | rence<br>1984 | Mean 1<br>1983 | 1984                                  | 0ccur<br>1983 | rence<br>1984 | <u>Mean</u><br>1983 | oiomass<br>1984 |
|                                     |       |               |                | · · · · · · · · · · · · · · · · · · · |               |               |                     |                 |
| Butomus umbellatus a/               | 0     | 0             | 0              | 0                                     | 0             | 2             | 0                   | 27.3            |
| <u>Chara</u> spp.                   | 70    | 65            | 85.8           | 119.8                                 | 11            | 15            | 30.4                | 60.8            |
| Elodea<br>canadensis                | 28    | 22            | 44.6           | 25.5                                  | 7             | 7             | 78.4                | 137.0           |
| <u>Heteranthera</u><br><u>dubla</u> | Tp/   | 0             | 1.5            | 0                                     | 7             | 7             | 58.4                | 173.9           |
| Myriophyllum<br>exalbescens         | T     | T             | 6.0            | 2.6                                   | 0             | ·Ť            | 0                   | 3.3             |
| Myriophyllum<br>spicatum            | 8     | 7             | 34.1           | 41.7                                  | 24            | 17            | 93.9                | 104.6           |
| Najas<br>flexilis                   | 3     | 6             | 3.3            | 2.6                                   | 3             | 7             | 2.3                 | 15.5            |
| Mitella<br>Myalina                  | 3     | 10            | 26.1           | 35.0                                  | 9             | 11            | 58.6                | 28.8            |
| <u>Mitellopsis</u><br><u>obtusa</u> | 1     | 1             | 34.0           | 11.5                                  | 9             | 10            | 81.7                | 48.9            |
| Potamogeton<br>crispus              | 3     | 3             | 29.9           | 17.7                                  | 10            | 13            | 83.5                | 69.6            |
| Potamogeton<br>gramineus            | 46    | 41            | 42.8           | 64.2                                  | 4             | 5             | 26.1                | 39.5            |
| Potamogeton spp. c/                 | 54    | 53            | 50.1           | 33.6                                  | 31            | 28            | 23.6                | 17.2            |
| Potamogeton<br>natans               | 1     | 0             | 72.2           | 0                                     | 0             | 0             | 0                   | 0               |
| Potamogeton<br>nodosus              | 1     | 0             | 5.0            | 0                                     | 0             | 1             | 0                   | 124.7           |
| Potamogeton<br>richardsonii         | 32    | 31            | 50.6           | 84.1                                  | 21            | 22            | 73.0                | 69.6            |
| Potamogeton<br>zosteriformis        | 2     | 3             | 7.3            | 20.6                                  | 2             | 8             | 3.0                 | 3.9             |
| Ranunculus<br>Tongirostris          | 0     | 0             | 0              | 0                                     | ι             | 0             | 102.4               | 0               |
| Sagittaria sp. a/                   | T     | T             | 16.2           | 1.0                                   | 0             | 2             | 0                   | 4.7             |
| /allisneria<br>americana            | 2     | 5             | 12.7           | 6.5                                   | 70            | 67            | 49.0                | 41.1            |
| Zannichellia<br>palustris           | 0     | 1             | 0              | 1.4                                   | 0             | 0             | 0                   | 0               |

a/ Emergent species collected only in the submersed stage.

b/ T = < 1%

c/ Narrow-leaf forms.

Table 25. Mean dry weight biomass  $(g/m^2)$  and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCDRS in June 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

| Taxon                               | Year         | Stag<br>Island     | Fawn<br>Island      | Russell<br>Island  | Belle<br>Isle      | Pt.<br>Hennepin    | Stony<br>Island     |
|-------------------------------------|--------------|--------------------|---------------------|--------------------|--------------------|--------------------|---------------------|
| Chara spp.                          | 1983<br>1984 | 24 (67)<br>63 (70) | 28 (82)<br>102 (71) | 51 (85)<br>40 (80) | 45 (38)<br>32 (31) | 27 (20)<br>18 (10) | 4 (3)               |
| <u>Canadensis</u>                   | 1983<br>1984 | 49 (33)<br>18 (50) | 6 (4)<br>0          | 58 (22)<br>8 (22)  | . 1 (5)            | 0<br>1 (2)         | 50 (19)<br>157 (33) |
| <u>Heteranthera</u><br><u>dubia</u> | 1983<br>1984 | 0                  | 0                   | 0                  | 0                  | 0                  | 15 (17)<br>6 (7)    |
| Myriophyllum                        | 1983         | 20 (16)            | 0                   | 81 (2)             | 34 (10)            | 124 (6)            | 12 (19)             |
| spicatum                            | 1984         | 40 (17)            | 0                   | 0                  | 24 (18)            | 0                  | 4 (10)              |
| Nitella                             | 1983         | 22 (5)             | 20 (6)              | 78 (2)             | 37 (49)            | 42 (19)            | 0 3 (3)             |
| hyalina                             | 1984         | 64 (17)            | 5 (2)               | 2 (8)              | 30 (46)            | 29 (33)            |                     |
| Potamogeton                         | 1983         | 40 (10)            | 1 (2)               | 0                  | 8 (13)             | 84 (7)             | 143 (47)            |
| crispus                             | 1984         | 18 (8)             | 4 (4)               |                    | 4 (9)              | 0                  | 150 (42)            |
| Potamogeton                         | 1983         | 14 (22)            | 19 (46)             | 14 (33)            | 22 (15)            | 0                  | 30 (6)              |
| gramineus                           | 1984         | 10 (22)            | 7 (47)              | 5 (33)             | 2 (12)             | 0                  | 0                   |
| Potamogeton a/                      | 1983         | 32 (50)            | 32 (27)             | 46 (62)            | 5 (56)             | 28 (87)            | 4 (47)              |
|                                     | 1 <b>984</b> | 19 (57)            | 4 (40)              | 14 (53)            | 2 (50)             | 20 (65)            | 2 (30)              |
| Potamogeton                         | 1983         | 14 (12)            | 32 (20)             | 32 (17)            | 11 (23)            | 2 (2)              | 44 (11)             |
| richardsonii                        | 1984         | 8 (17)             | 10 (20)             | 17 (33)            | 8 (23)             | 21 (26)            | 0                   |
| Vallisneria<br>americana            | 1983<br>1984 | 0                  | 0<br>1 (2)          | 0                  | 4 (77)<br>2 (62)   | 4 (50)<br>4 (54)   | 9 (39)<br>8 (47)    |

a/ Narrow-leaf forms.

Table 26. Mean dry weight biomass  $(g/m^2)$  and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCDRS in July-August 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

| Taxon                               | Year         | Stag<br>Island       | Fawn<br>Island       | Russell<br>Island    | Belle<br>Isle       | Point<br>Hennepin   | Stony<br>Island      |
|-------------------------------------|--------------|----------------------|----------------------|----------------------|---------------------|---------------------|----------------------|
| Chara spp.                          | 1983<br>1984 | 100 (62)<br>132 (57) | 103 (71)<br>136 (81) | 110 (78)<br>121 (36) | 48 (10)<br>107 (38) | 3 (5)<br>16 (5)     | 0                    |
| <u>Canadensis</u>                   | 1983<br>1984 | 25 (42)<br>57 (45)   | 7 (16)<br>0          | 59 (33)<br>13 (12)   | 1 (3)               | 0                   | 169 (24)<br>171 (21) |
| <u>Heteranthera</u><br><u>dub1a</u> | 1983<br>1984 | 0                    | 0                    | 2 (3)<br>0           | 0                   | 0                   | 51 (24)<br>124 (21)  |
| Myriophyllum<br>spicatum            | 1983<br>1984 | 20 (20)<br>41 (20)   | 5 (2)<br>0           | 1 (3)<br>1 (3)       | 80 (36)<br>66 (19)  | i61 (12)            | 92 (48)<br>82 (33)   |
| Majas<br>flexilis                   | 1983<br>1984 | 0                    | 0<br>1 (19)          | 0<br>1 (6)           | 2 (10)<br>3 (31)    | 1 (2)<br>1 (2)      | 0                    |
| Mitella<br>hyalina                  | 1983<br>1984 | 35 (3)<br>111 (13)   | 0<br>23 (17)         | 0<br>6 (14)          | 4 (3)               | 0<br>5 (10)         | 0                    |
| Mitellopsis<br>obtusa               | 1983<br>1984 | 0                    | 0                    | 0                    | 71 (51)<br>36 (38)  | 1 (2)               | 0                    |
| Potamogeton<br>Crispus              | 1983<br>1984 | 33 (15)<br>28 (8)    | 6 (4)                | 0                    | 12 (10)<br>9 (17)   | 0                   | 3 (9)<br>40 (27)     |
| Potamogeton<br>gramineus            | 1983<br>1984 | 36 (37)<br>13 (7)    | 31 (49)<br>34 (52)   | 24 (56)<br>101 (50)  | 0<br>60 (10)        | 0<br>72 (7)         | 32 (3)<br>75 (3)     |
| Potamogeton <sup>a</sup> /<br>spp.  | 1983<br>1984 | 39 (48)<br>41 (43)   | 35 (64)<br>30 (45)   | 36 (58)<br>29 (67)   | 5 (5)<br>5 (14)     | 37 (42)<br>29 (49)  | 20 (18)<br>40 (24)   |
| otamogeton<br>richardsonii          | 1983<br>1984 | 31 (32)<br>56 (42)   | 53 (62)<br>53 (21)   | 36 (36)<br>212 (42)  | 72 (38)<br>98 (45)  | 86 (48)<br>127 (35) | 49 (12)<br>142 (15)  |
| otamogeton<br>zosteriformis         | 1983<br>1984 | 9 (7)<br>0           | 5 (9)<br>41 (12)     | 0                    | 4 (13)<br>4 (33)    | 0                   | 1 (3)                |
| allisneria<br>americana             | 1983<br>1984 | 1 (2)<br>7 (3)       | 1 (4)<br>1 (2)       | 0<br>3 (3)           | 25 (72)<br>20 (76)  | 50 (70)<br>42 (68)  | 37 (67)<br>63 (55)   |

<sup>&</sup>quot;/ Narrow-leaf forms

Table 27. Hean dry weight biomass  $(g/m^2)$  and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCDRS in September 1983 and 1984. Hean biomass is based only on samples in which the taxon occurred.

| Texon                          | Year                 | Stag<br>Island      | Fawn<br>Island       | Russell<br>Island   | Belle<br>Isle       | Pt.<br>Hennepin     | Stony<br>Island      |
|--------------------------------|----------------------|---------------------|----------------------|---------------------|---------------------|---------------------|----------------------|
| Chara spp.                     | 1983<br>1984         | 203 (47)<br>95 (48) | 116 (69)<br>190 (76) | 94 (69)<br>204 (64) | 15 (12)<br>73 (38)  | 1 (9)<br>10 (14)    | 0                    |
| <u>Canadensis</u>              | 1983<br>1984         | 26 (37)<br>27 (38)  | 75 (36)<br>2 (7)     | 54 (25)<br>7 (19)   | 1 (2)<br>2 (2)      | 2 (2)               | 1 (9)<br>2 (6)       |
| Heteranthera<br>dubla          | 1983<br>1984         | <i>o</i><br>0       | 0                    | 0<br>0              | 0                   | 5 (7)<br>0          | 129 (18)<br>231 (39) |
| Myriophyllum<br>spicatum       | 1983<br>1984         | 69 (23)<br>53 (23)  | 2 (2)                | 1 (6)<br>8 (3)      | 72 (34)<br>91 (26)  | 125 (7)<br>101 (11) | 145 (45)<br>225 (36) |
| Najas<br>flexilis              | 1983<br>1984         | 4 (7)<br>0          | 4 (14)<br>5 (24)     | 1 (6)<br>1 (6)      | 3 (14)<br>33 (24)   | 1 (2)<br>15 (9)     | 0                    |
| Nitella<br>hyalina             | 1983<br>1984         | 25 (7)<br>3 (10)    | 23 (2)<br>3 (7)      | 6 (3)<br>0          | 167 (14)<br>95 (5)  | 0 1 (2)             | 0                    |
| Mitellopsis<br>obtusa          | 1983<br>1984         | 4 (7)<br>0          | 0<br>12 (5)          | 69 (6)<br>0         | 104 (31)<br>59 (48) | 0                   | 0                    |
| <u>Crispus</u>                 | 1983<br>1984         | 0<br>11 (5)         | 0                    | 0                   | 5 (2)<br>2 (2)      | 0                   | 6 (3)<br>23 (18)     |
| Potamogeton<br>gramineus       | 1983<br>1984         | 47 (38)<br>76 (23)  | 88 (64)<br>47 (69)   | 65 (69)<br>171 (64) | 28 (10)<br>38 (10)  | 0 1 (2)             | 0                    |
| Potamogeton <sup>2</sup> /spp. | 1983<br>1984         | 95 (65)<br>53 (48)  | 30 (48)<br>12 (45)   | 81 (64)<br>74 (81)  | 8 (5)<br>14 (12)    | 107 (16)<br>3 (2)   | 1 (3)<br>34 (6)      |
| Potamogeton<br>richardsonii    | 1983<br>1984         | 96 (38)<br>42 (43)  | 51 (55)<br>69 (33)   | 78 (14)<br>234 (25) | 98 (43)<br>30 (33)  | 114 (12)<br>50 (21) | 0                    |
| <u>Zosteriformis</u>           | 1983<br>1984         | 15 (2)<br>14 (8)    | 1 (2)<br>1 (2)       | 0<br>1 (3)          | 0 7 (2)             | 0                   | 0                    |
| Vallisneria<br>americana       | 1983<br>1 <b>984</b> | 37 (5)<br>6 (7)     | 0<br>12 (17)         | 8 (11)<br>2 (11)    | 56 (95)<br>30 (83)  | 78 (84)<br>84 (98)  | 135 (76)<br>90 (61)  |

a/ Narrow-leaf forms.

these areas (Table 1 of Appendix K). The number of taxa per Ponar grab averaged about 2.6 at Stag Island (Table 28) and tended to increase over the season.

At Fawn Island, submersed macrophytes were present in all blocks (Figs. 4-6 and 22-24 of Appendix 0). Chara spp. occurred in relatively pure stands over most of the lightly stippled area in the figures. Potamogeton richardsonii, P. gramineus and Potamogeton spp. made up the narrow dark U-shaped band (e.g., Fig. 6 of Appendix 0) adjacent to the divided shipping channels and the small patches within the Chara spp. stand. Frequency of occurrence and biomass of Potamogeton spp. were higher on the eastern wing of the wedge and those of P. richardsonii on the west side; P. gramineus was about equally abundant in both wings. Potamogeton spp. and P. gramineus dominated at the tip of the wedge. The only other common taxon, E. canadensis, occurred in deep water adjacent to the main shipping channel, in blocks 3, 5, and 6. A maximum of seven taxa (average four to five) were collected in each block (Table 2 of Appendix K). The number of taxa per Ponar grab averaged 2.6 and increased progressively over the growing season in both years (Table 28).

At Russell Island, the biomass of Chara spp., Potamogeton spp., and P. gramineus was relatively high in all nine blocks of the sampling grid (Figs. 7-9 and 25-27 of Appendix O). Concentrations of Chara spp. were highest in the lightly stippled areas of blocks 2 and 6-9 and in pure stands in blocks 6 and 7. The dark areas in blocks 1, 2, and 6 and the strip in blocks 7-9 adjacent to shore represented P. gramineus. The dark strip in blocks 7-9 also contained high concentrations of Potamogeton spp. and P. gramineus, and the dark areas in blocks 4, and 5 were P. richardsonii. Elodea was common in deeper water adjacent to the shipping channel in blocks 3 and 4. Vallisneria americana was restricted to block 4 and P. nodosus and P. natans to blocks 1, 3, 4, and 7. Taxa were distributed evenly over most of the grid, averaging three to five (maximum, 9) per block (Table 3 of Appendix K). Diversity was greatest at grid intersection 10 and in blocks 3 and 4. The number of taxa per grab averaged 2.6 and increased through the season (Table 28).

At Belle Isle most of the plants were close to shore in blocks 8-10 in an extensive littoral area (Figs. 10-12 and 28-30 of Appendix 0). Few plants were found in blocks 1-7 in relatively deep water (> 12 ft). Vallisneria americana was relatively abundant in all blocks; however, its low growth profile and the reduced water clarity in the Detroit River may have decreased its visibility on the aerial photos. The large dark band in block 1 and the smaller bands in blocks 1-6 were mainly P. richardsonii, mixed with P. zosteriformis and Potamogeton spp. The dark areas in blocks 7-10 were mostly small beds of Myriophyllum spicatum, P. richardsonii, and P. gramineus. Blocks 7-10 also included extensive beds of Chara spp., Najas flexilis, and Nitellopsis obtusa which may not have been visible because of their low growth profile.

Najas flexilis and P. zosteriformis occurred in all but two blocks but never at high biomass levels. The macrophyte fauna was more diverse off Belle Isle than at any other location. Eleven taxa were found at grid intersection 18 (Table 4) of Appendix K). Diversity was greatest in blocks 7-10 and averaged

Table 28. Mean number of submersed macrophyte taxa per Ponar grab at six locations in SCDRS in 1983 and 1984.

|                | Jı   | ine  | July-A | lugust       | Septe | mber | Grand<br>mean |
|----------------|------|------|--------|--------------|-------|------|---------------|
| Location       | 1983 | 1984 | 1983   | 1984         | 1983  | 1984 |               |
| Stag Island    | 2.2  | 2.8  | 2.8    | 2.4          | 2.8   | 2.8  | 2.6           |
| Fawn Island    | 1.9  | 1.9  | 2.9    | 2.7          | 3.2   | 2.9  | 2.6           |
| Russell Island | 2.2  | 2.4  | 2.7    | 2.6          | 3.0   | 2.8  | 2.6           |
| Belle Isle     | 3.1  | 2.8  | 2.8    | <b>3.3</b> · | 2.8   | 3.1  | 3.0           |
| Pt. Hennepin   | 2.1  | 2.6  | 1.8    | 1.8          | 1.4   | 1.7  | 1.9           |
| Stony Island   | 2.3  | 2.2  | 2.1    | 2.1          | 1.6   | 1.8  | 2.0           |

four to nine taxa over the sampling grid. The average number of species per grab was three and the seasonal range was 2.8-3.3 (Table 28).

On the shoals adjacent to Pt. Hennepin, Potamogeton spp. and V. americana were the dominant taxa. Narrow-leaf forms of Potamogeton spp. were found at relatively high biomass in every block except 7 and 14 in June, but had almost disappeared by September. <u>Vallisneria</u> <u>americana</u> was present in every block over all sampling dates and by September had replaced Potamogeton spp. as the most abundant taxon. Interpretation of plant distribution (Figs. 13-15 and 31-33 of Appendix 0) is difficult, because many plants did not occur at densities great enough to be visible on aerial photos; the stippled areas generally represent the distribution of  $\underline{Potamogeton}$  spp. in June and of  $\underline{V}$ .  $\underline{americana}$  in July-August and September. However, the dark bands adjacent to the channel in blocks 1, 2, 5, and 11-14 were mainly P. richardsonii. The dark bands in block 8 were composed mainly of M. spicatum, P. crispus and P. richardsonii. Chara spp. and Najas flexilis were in patches down the middle of the island, in a strip bounded by the corner of grid intersections 10, 11, 33, and 34, and are not visible in our photographs. Diversity was highest along the Fighting Island Channel, where dark and light bands adjoined. The number of species at the grid intersections ranged from two to seven (Table 5 of Appendix K). The average of 1.9 taxa per grab (the lowest for the six locations sampled) declined consistently over the season (Table 28).

The distribution of taxa at Stony Island can be grouped into three areas-the head of the island (blocks 1-5), an inlet area (blocks 6-8), and an intermediate area (blocks 9-11). The darker areas in blocks 2, 3, and 4 indicate the presence of P. richardsonii and M. spicatum (Figs. 16-18 and 34-36 of Appendix 0).

Potamogeton spp. and V. americana made up the lighter areas in blocks 1-5. Inside the bay the dark areas represented beds of Elodea canadensis, Heteranthra dubia, P. crispus, Ranunculus longirostris, and Myriophyllum spicatum, in pure or mixed stands. Potamogeton crispus was prevalent only in June and was replaced by H. dubia by September. The long strip of plants in blocks 9-11 is composed of H. dubia and M. spicatum. The lighter areas in blocks 9-11 show beds of V. americana. Taxa per grid ranged from zero to five with a maximum of 7 at grid intersection 5 (Table 6 of Appendix K). Taxa per grab averaged 2.0 and declined through the season (Table 28).

## <u>Distribution of Emergent Plants</u>

Emergent macrophytes were present in only two of the sampling grids at the six locations. We collected 11 taxa at Fawn Island and Stony Island (Table 29). A small bed of Scirpus acutus was at the tip of Fawn Island in block 7 and extensive beds were in blocks 8, 10, and 11 off Stony Island. Typha latifolia and Sparganium eurycarpum usually occurred in pure stands, whereas the species of Eleocharis, Phalaris, Sagittaria, and Scirpus were usually found together in mixed stands. Because of the great size and diversity of the emergent beds at Stony Island and limited sampling effort, our coverage of the beds was not representative. The beds appeared to be stable and the percent occurrence between years for the most part reflected this stability (Table 29).

Table 29. Percent frequency of occurrence and mean dry weight biomass  $(g/m^2)$  of emergent macrophytes collected at Stony Island, in the Detroit River, in 1983 and 1984.

|                       | 0ccu           | rrence         | Biom  | ass   |
|-----------------------|----------------|----------------|-------|-------|
| Taxon                 | 1983<br>(n=33) | 1984<br>(n=39) | 1983  | 1984  |
| Eleocharis spp.a/     | 6              | 15             | 37.2  | 18.4  |
| Phalaris arundinacea  | 3              | 5              | 29.6  | 42.7  |
| Sagittaria latifolia  | 12             | 15             | 13.4  | 35.5  |
| Sagittaria rigida     | 0              | 26             | 0     | 198.0 |
| Scirpus acutus        | 3              | 5              | 2.8   | 9.6   |
| Scirpus americanus    | 18             | 23             | 178.7 | 299.4 |
| Scirpus fluviatilis   | 9              | 3              | 965.8 | 8.2   |
| Scirpus validus       | 9              | 23             | 28.0  | 44.9  |
| Sparganium eurycarpum | 36             | 33             | 196.2 | 357.5 |
| Typha angustifolia    | 36             | 26             | 903.5 | 865.3 |

a/ Two closely related species,  $\underline{E.}$  smallii and  $\underline{E.}$  erythropoda.

## Abundance of Submersed Plants

Yearly variation in abundance of taxa of submersed macrophytes by river is shown in Table 24. The biomass of Chara spp., P. gramineus, and M. spicatum increased from 1983 to 1984 in both rivers. Potamogeton crispus and Potamogeton spp. were less abundant in both rivers in 1984 than in 1983, whereas N. flexilis and P. richardsonii were more abundant in the St. Clair River but less abundant in the Detroit River in 1984 than in 1983.

Differences in biomass of dominant taxa between years and sampling periods at each sampling location are shown in Tables 25-27. In the St. Clair River in June, most taxa were less abundant in 1984 than in 1983. However, a paired comparison of all taxa showed only the differences at Russell Island to be significant. Biomass of dominant taxa declined similarly in the Detroit River, but was significant only at Belle Isle. In July, the trend of decline in taxa from 1983 to 1984 did not occur; rather the biomass of most taxa was higher in 1984 than in 1983. At Stony Island the increase in biomass in July from 1983 to 1984 was significant. In September, the change in biomass for most taxa was similar between years. Over all, two taxa--Chara spp. and N. flexilis--increased rather consistently from 1983 to 1984, whereas one taxon, Potamogeton spp., declined over the same time period. The biomass of E. canadensis at Russell Island and V. americana at Belle Isle was consistently lower in 1984 than in 1983.

An analysis of dry weight biomass of all taxa combined, by year, month, and blocks over sampling location, showed several significant differences (Table 30). However, these differences must be interpreted cautiously because most of the combinations (interactions) between year, month, and block were also significant (Appendix P). At Stag Island, biomass values were significantly higher in 1983 than in 1984 (Table 30), but this was not consistent over all months (Fig. 6) or blocks (Fig. 7). Biomass increased significantly from June to July-August to September in 1983 (Table 30), but this trend was not obvious in 1984 (Fig. 6). Biomass was higher in all blocks in September 1983, but was higher in blocks 10-13 in June and July-August 1984. A partial reason for the biomass being higher early in the year in 1984 was the occurrence of several unusually heavy samples of Chara spp. and N. flexilis in our collections in blocks 12 and 13. Collectively, biomass was highest in blocks 6-8, 12, and 13.

At Fawn Island, biomass differences between years were negligible (Table 30). In both 1983 and 1984, biomass increased steadily through the season (Fig. 6). Biomass in blocks 5, 6, and 11 was higher in 1984 than in 1983 (Fig. 8) in most months. The decline from 1983 to 1984 was greatest in blocks 1-3 at the head of the island and the increase was greatest in blocks 5-6, near the center of the grid. As at Stag Island, the high biomass of Chara spp. and N. flexilis at Fawn Island in June and July-August kept the  $\overline{1984}$  biomass levels near those of 1983.

Macrophyte biomass at Russell Island was significantly higher in 1984

| Stag Island 97 1983 19 Faum Island 130 1 Russell Island 204 19 |                 | <b>=</b>        | Month       |             |            |              |              |           | ÷          |          | Block      | <del>*</del>  |        |         |               |      |      |     |    |
|--|-----------------|-----------------|-------------|-------------|------------|--------------|--------------|-----------|------------|----------|------------|---------------|--------|---------|---------------|------|------|-----|----|
| 130<br>204<br>1963   | 38.6<br>1984    | 127<br>Sep.     | 97<br>July  | 51<br>June  | 184        | 215          | 22           | 142 (8)   | 146        | <u> </u> | 86         | <b>%</b> (10) | (15)   | 52 (14) | 57<br>(5)     | °E   | (2)  | (3) | °E |
| 22 <u>28</u>   | 131 2           | 213<br>Sep.     | 154<br>July | 23<br>June  | 215<br>(*) | <b>3</b> E   | 138          | (9)       | 136        | 105      | (16)       | (2)           | 3) [2] | 123     | (8)           |      |      |     |    |
|  | 123 2<br>1983 S | 265<br>Sep.     | 158<br>July | 68<br>June  | (6)        | 508          | (8)          | EE        | 2 <b>2</b> | 142      | 191        | \$ S          | (3%    |         |               |      |      |     |    |
| Belle Isle 106 1<br>1983 19                                    | 52.5            | <del>6</del> 50 | 136<br>July | 41<br>June  | (e)<br>(e) | 19 (S)       | 8 <u>5</u> ] | <b>25</b> | 25         | (5)      | 83         | 9 (9)         | ₹€     | (2)     |               |      |      |     |    |
| Point Mennepin 75<br>1984 19                                   | 1983            | 93<br>Sep.      | 91<br>XIN   | 35<br>June  | (6)        | (8)          | (2)          | <b>86</b> | F 🗐 📗      | (3)      | <b>%</b> E | (4)           | (21)   | [6]     | <b>88</b> (7) | (13) | (10) | 38  |    |
| Stony Island 180 1   | 146 2<br>1983 5 | 220<br>Sep.     | 161<br>July | 107<br>June | 385        | <b>8</b> (8) | <b>3</b> 3   | 82.00     | 138        | 8€       | [2]        | (9)           | (5)    | 78      |               |      |      |     |    |

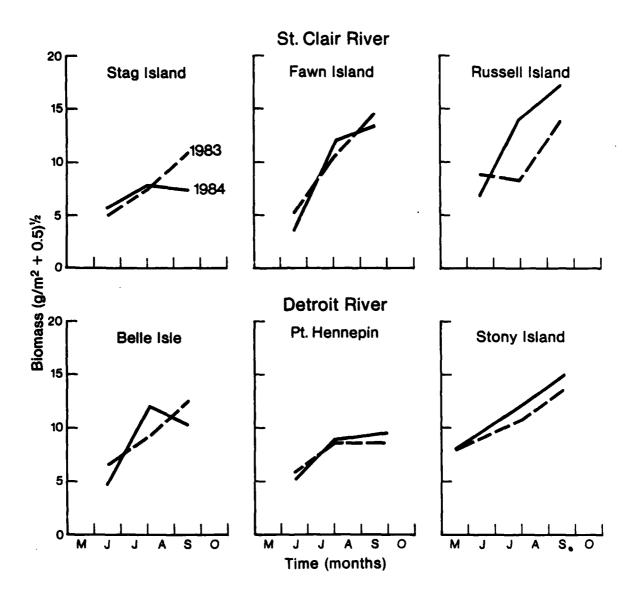


Figure 6. Mean seasonal biomass (square root of dry weight in  $g/m^2$  + 0.5) of submersed macrophytes at six locations in the SCDRS.

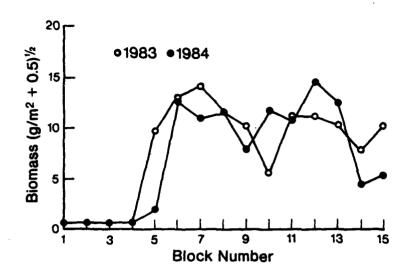


Figure 7. Mean biomass (square root of dry weight in  $g/m^2 + 0.5$ ) of submersed macrophytes in blocks composing the sampling grid at Stag Island. (See Appendix I, Fig. 1 for block locations.)

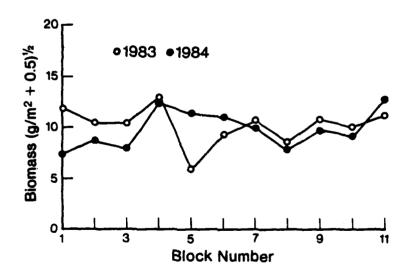


Figure 8. Mean biomass (square root of dry weight in  $g/m^2 + 0.5$ ) of submersed macrophytes in blocks composing the sampling grid at Fawn Island. (See Fig. 2 of Appendix I for block locations.)

}

than in 1983 (Table 30). Although biomass was higher in 1983 than in 1984 during one month and several blocks (Figs. 6 and 9), the differences were not statistically significant. Biomass at this location tended to increase through the growing season. Biomass was highest in blocks 3 and 7-9, which were nearest the shore (Table 30). Large increases in the biomass of Chara spp., P. gramineus, and P. richardsonii accounted for the larger biomass in 1984.

At Belle Isle, yearly differences in dry weight biomass were negligible (Table 30), except for the high density in July-August 1984 (Fig. 6); the seasonal differences between July-August and September were not significant (Table 30). The high July-August biomass resulted mainly from high densities of Chara spp. and P. richardsonii in blocks 1, 7, and 8. Yearly differences between corresponding grids were small and trends were about the same (Fig. 10). Biomass was highest in blocks 7-10 in the downstream, shallow, protected area (Table 30).

At Point Hennepin, as at Belle Isle, differences in abundance between years and between September and July-August were not significant (Table 30). Monthly trends in biomass were similar between years (Fig. 6). Although differences between years were large in several blocks, no consistent trends were evident (Fig. 11). Biomass was highest in blocks 6 and 8, in the center of the sampling area on the side of the main shipping channel (Table 30).

For all three sampling periods, the standing crop biomass of submersed macrophytes at Stony Island was significantly higher in 1984 than in 1983 (Table 30, Fig. 6). Biomass also differed between years in all blocks except 3 and 4 (Fig. 12). Trends among blocks between years were consistent; biomass was highest in blocks 6, 7, and 8 in inlet areas. At Stony Island, unlike the other Detroit River locations, biomass increased significantly from June through September.

## Abundance of Emergent Plants

We did not statistically compare yearly estimates of biomass of emergent macrophytes at Stony Island (Table 29) because sample size was too small (12 or fewer samples per taxon per year). The dry weight biomass of Scirpus fluviatilus and Typha latifolia was largest and that of Scirpus acutus smallest. Maximum dry weight biomasses for individual samples of Typha exceeded 2000  $g/m^2$ . All taxa were present during each sampling period, and abundance of most taxa usually peaked in July-August. Differences in taxon biomass between years at Stony Island were mainly small. The few large differences were due to the large area and diversity of taxa in relation to sampling effort. The biomass estimates for the small emergent bed at Fawn Island can be evaluated by month and year. No samples of S. acutus were collected in June of either year because the plant bed had not yet broken the water surface. The biomass of this bed averaged 171  $g/m^2$  in July-August and 306 in September in both 1983 and 1984. However, the biomass in 1984 was 70% lower in July-August and 21% lower in September than in the same months in 1983.

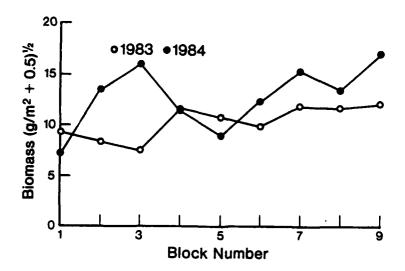


Figure 9. Mean biomass (square root of dry weight in  $g/m^2 + 0.5$ ) of submersed macrophytes in blocks composing the sampling grid at Russell Island. (See Fig. 3 of Appendix I for block locations.)

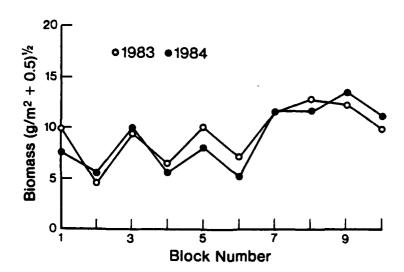


Figure 10. Mean biomass (square root of dry weight in  $g/m^2 + 0.5$ ) of submersed macrophytes in blocks composing the sampling grid at Belle Isle. (See Fig. 4 of Appendix I for block locations.)

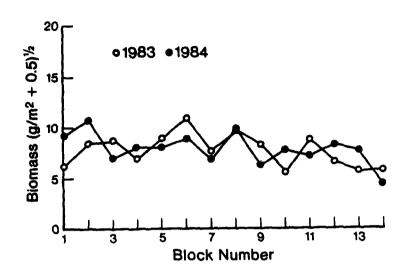


Figure 11. Mean biomass (square root of dry weight in  $g/m^2 + 0.5$ ) of submersed macrophytes in blocks composing the sampling grid at Point Hennepin. (See Fig. 5 of Appendix I for block locations.)

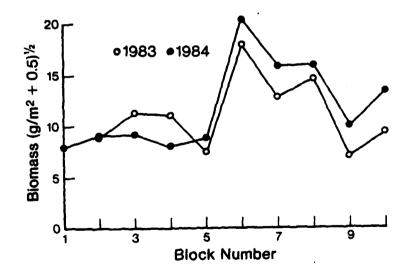


Figure 12. Mean biomass (square root of dry weight in  $g/m^2 + 0.5$ ) of submersed macrophytes in blocks composing the grid at Stony Island. (See Fig. 6 of Appendix I for block locations.)

## Areal Extent of Submersed Macrophyte Beds

The amount of area covered by plant beds at each location was estimated by overlaying the sampling grid (e.g., Fig. 1 of Appendix P) on each photograph with a grid that divided each 500-ft-square block into 100 equal sections. Each one-hundredth section was scored if half the section was covering plants, and scores were summed over each block and expressed as a percentage. Two independent estimates were obtained of the percent coverage of submersed macrophytes, by block. These estimates are given for each sampling location, month, and year in Tables 31 and 32.

At Stag Island, submersed plant beds in 1983 and 1984 covered an average of 23% of the sampling grid area in September (Table 31). Coverage increased about 7 percentage points from June to September and differences between years were small. The percent coverage by submersed macrophytes was largest in blocks 7-9 and 12.

Plant beds off Fawn Island were not clearly visible in June 1983 and were even less visible in 1984 (Appendix N). Biomass estimates for June 1984 indicated that the abundance of most taxa was reduced--except for Chara spp. (Table 25). By July-August and September, differences between years in percent coverage were negligible. Coverage peaked at 68% in September. This represents a difference of only 2-4 percentage points from July-August to September. Bed development was most extensive in blocks 4, 6, 7, 9, and 11.

Plant bed coverage in June at Russell Island differed greatly between 1983 and 1984 (Table 31). By July-August and September, however, the coverage tween the two years differed only by 5-6 percentage points. Seasonal ferences, once the beds developed, were about 2-3 percentage points. Bed co.arage over the sampling area averaged 66%. Coverage of submersed rophytes was most extensive in blocks 4, 5, and 7-9.

Plant bed coverage at Belle Isle in June and July-August was also substantially less in 1984 than in 1983, but differences in September were negligible (Table 32). Differences in coverage between sampling periods did not exceed 5 percentage points in 1983. The coverage was greatest (26%) in September and was generally highest in blocks 7-9.

Plant bed cover at Point Hennepin and Stony Island differed markedly from that at other locations. Coverage was greater and seasonal differences were larger in 1984. Bed coverage at Point Hennepin averaged 57% in September and was 8-9 percentage points lower in June (Table 32). Plant coverage was greatest in blocks 3, 6, and 9.

Seasonal differences at Stony Island were 41 to 51 percentage points (Table 32). Maximum bed development was in September and averaged 78%; coverage was greatest in blocks 8, 10, and 11. The difference in seasonal development occurred mainly in blocks 1-5 at the upstream end of the island. Water depth of 10-12 ft and low water clarity (mean transmittance was 14% in this area) prevented observation of macrophyte beds until September, when they reached the water surface.

Table 31. Percent coverage of submersed macrophyte beds in the sampling grid at Stag, Fawn, and Russell islands in June, July-August, and September, 1983 and 1984.

| Block<br>number                      | Ju<br>1983 | ine              | July-<br>1983 | August<br>1984 | Sep <sup>1</sup> | tember<br>1984 |
|--------------------------------------|------------|------------------|---------------|----------------|------------------|----------------|
| <del></del>                          |            |                  | Stag Is       | land           |                  | <del></del>    |
| 1                                    | 0          | 0                | 0             | 0              | 0                | 0              |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8 | 0          | 0                | 0             | ŏ              | ŏ                | 0              |
| 3                                    | 0          | 0<br>0<br>0      | 0             | 0              | 0                | 0              |
| 4                                    | Õ          | Q                | Q             | 0              | 0                | 0              |
| 5                                    | 5          | 0                | 3             | Ŏ              | 1                | 1              |
| 5                                    | 1          | 3<br>38          | 18            | .8             | 20               | 16             |
| <b>'</b>                             | 31<br>· 38 | 38<br>38         | 55<br>34      | 42             | 50               | 39             |
| Š                                    | 38         | 44               | 34<br>35      | 55<br>33       | 70<br>39         | 52<br>41       |
| ó                                    | 20         | 10               | 35<br>20      | 11             | 3 <del>9</del>   | 30             |
| .1                                   | 12         | 25               | 39            | 28             | 31               | 20             |
| 2                                    | 60         | 61               | 50            | 59             | 58               | 66             |
| .3                                   | 9          | 10               | 14            | 26             | 20               | 38             |
| .4                                   | 9          | 12               | 9             | 14             | 15               | 6              |
| 5                                    | 10         | 15               | 24            | 27             | 22               | 16             |
| ean                                  | 16         | 17               | 20            | 20             | 24               | 22             |
|                                      |            |                  | Fawn Is       | land           |                  |                |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8 | 6          | 0                | _6            | 6              | 9                | 7              |
| 2                                    | 39         | Ŏ                | 73            | 72             | 72               | 69             |
| 3<br>4                               | 16<br>5    | 0                | 44<br>100     | .55            | 45               | 41             |
| 5                                    | 6          | 0<br>0<br>0<br>9 | 10            | 100<br>9       | 100<br>16        | 100<br>- 14    |
| Ŕ                                    | 6          | Ď                | 98            | 92             | 98               | 99             |
| į                                    | ĕ          | ğ                | 100           | 100            | 100              | 100            |
| 8                                    | 6          | Ŏ                | 58            | 69             | 75               | 86             |
| 9                                    | 0          | 0                | 100           | 100            | 100              | 100            |
| 0<br>1                               | Ó          | 0                | 11            | 25             | 25               | 34             |
| 1                                    | 1          | 0                | 98            | 100            | 100              | 100            |
| ean                                  | 7          | 1                | 63            | 66             | 67               | 68             |
|                                      |            |                  | Russell I     | sland          |                  |                |
| 1<br>2<br>3<br>4<br>5<br>6<br>7      | 42         | 0                | 50            | 28             | 52               | 30             |
| 2                                    | 41         | 16               | 43            | 14             | 42               | 28             |
| 2                                    | 4          | .0               | 7             | 9              | 14               | 11             |
|                                      | 66<br>53   | 12<br>25         | 85            | 72<br>100      | 92               | 78             |
| í                                    | 16         | 25<br>0          | 100<br>22     | 100<br>36      | 100<br>26        | 100<br>33      |
| 7                                    | 12         | 32               | 88            | 86             | 93               | 33<br>88       |
| 3                                    | 100        | 10               | 100           | 100            | 100              | 100            |
|                                      | 100        | 41               | 100           | 100            | 100              | 100            |
| ean .                                | 48         | 25               | 66            | 61             | 69               | 63             |

Table 32. Percent coverage of submersed macrophyte beds in the sampling grid at Belle Isle, Point Hennepin, and Stony islands in June, July-August, and September, 1983 and 1984.

| Block<br>number                           | <u>Ju</u><br>1983 | ne<br>1984 | <u> </u>     | 1984         | <u>Sept</u><br>1983 | ember<br>1984 |
|---|-------------------|------------|--------------|--------------|---------------------|---------------|
|   |                   |            | Belle Isle   | <del>-</del> |                     |               |
| 1   | 14                | 9          | 16           | 14           | 23                  | 11            |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9 | 2                 | 1          | 4            | 6            | 1                   | 10            |
| 3   | 15                | 6<br>4     | 7            | 9<br>3<br>3  | 1                   | 8             |
| 4   | 2 22              | 4          | 2<br>22      | 3            | 2<br>20             | 20            |
| 6   | 6                 | 4          | 5            | 6            | 3                   | 4             |
| 7   | 50                | 12         | 63           | 20           | 75                  | 34            |
| 8   | 48                | 12         | 63           | 47           | 69                  | 72            |
|   | 38                | 17         | 38           | 36           | 53                  | 59            |
| 10  | 23                | 6          | 17           | 19           | 27 .                | 30            |
| Mean                                      | 22                | 8          | 24           | 16           | 27                  | 25            |
|   |                   | Po         | int Hennepin | ı            |                     |               |
| 1   | 58                | 70         | 61           | 81           | 64                  | 90            |
| 2   | 50                | 30         | 48           | 55           | 42                  | 92            |
| 1<br>2<br>3<br>4<br>5<br>6<br>7           | 95                | 100        | 86           | 94           | 79                  | 89            |
| 4   | 9                 | 25         | 12           | 21           | 17                  | 16            |
| 5   | 39                | 61         | 51<br>05     | 70<br>05     | 73<br>92            | 82            |
| 7   | 100<br>11         | 100<br>31  | 95<br>16     | 95<br>26     | 19                  | 88<br>25      |
| Á   | 74                | 39         | 67           | 59           | 64                  | 78            |
| 8<br>9                                    | 88                | 41         | 93           | 68           | 100                 | 100           |
| 10  | 1                 | 25         | 5            | 24           | 6                   | 19            |
| 11  | 50                | 75         | 59           | 62           | 69                  | 53            |
| 12  | 42                | 77         | 51           | 83           | 59                  | 95            |
| 13<br>14                                  | 0<br>1            | 22<br>45   | 17<br>19     | 15<br>38     | 28<br>23            | 0<br>39       |
| Mean                                      | 44                | 53         | 49           | 56           | 52                  | 62            |
| riegii                                    | 77                |            | tony Island  | 30           | JŁ                  | 02            |
| _   |                   |            | •            | _            |                     |               |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8      | 0                 | 0          | 0            | 0            | 42                  | 17            |
| 2   | 0<br>0            | 9          | 22<br>90     | 26<br>73     | 100<br>81           | 95<br>84      |
| 4   | 0                 | 6          | 31           | 73<br>47     | 36                  | 81            |
| 5   | ŏ                 | 11         | i            | 28           | 84                  | 100           |
| 6   | 45                | 39         | 45           | 78           | 81                  | 86            |
| 7   | 38                | 42         | 39           | 73           | 92                  | 99            |
| 8   | 100               | 100        | 100          | 100          | 100                 | 100           |
| 9<br>10                                   | 33                | 20         | 23           | 58<br>04     | 23<br>94            | 63            |
| 11  | 55<br>81          | 63<br>72   | 41<br>70     | 94<br>64     | 72                  | 96<br>100     |
|   |                   |            |              |              |                     |               |
| Mean                                      | 32                | 33         | 42           | 58           | 73                  | 84            |
|   |                   |            |              |              |                     |               |

# Relationship between Macrophytes and Physical Environment

Water depth, light transmission, and current velocity measurements were taken with each group of three Ponar samples and at each grid line intersection (Tables 1-6 of Appendix K). Water depth at grapnel stations sometimes exceeded 30 ft. Many stations were located in or adjacent to the shipping channel, where a difference in horizontal distance of 25 to 50 ft was accompanied by a change in water depth of up to 18 ft. Light transmission varied from 0 to 98%. Transmission was high in shallow water in beds of Chara spp., and low in deep water or in thick beds of submersed macrophytes. Currents ranged from a maximum of 4.0 ft/s at the head of Stag Island to zero in shallow, protected areas at Belle Isle and Stony Island.

The average depths at which Ponar samples of submersed plants were collected varied little between the sampling locations, ranging only from 8 ft at Stag Island to 6 ft at Point Hennepin and Stony Island (Table 33). Light transmission and current velocity varied more widely. Average light transmission was 72% lower at Stony Island than at Stag Island, and values were typically about 2-3 times higher in the St. Clair River than in the Detroit River. Similarly, current velocities in the St. Clair River were about twice those in the Detroit River. In general, bottom current velocities were about 55% of those at the surface.

In the St. Clair River, light transmission and current velocity decreased markedly from June to September in beds of submersed plants but declined less sharply or not at all in adjacent areas without plants (Table 34). Average reduction in light transmission values was 25-60% in plant beds and 14-35% in adjacent plant-free areas. Reduction of light transmission values in plant-free areas was probably due to changes in sediment turbidity or plankton abundance. Current velocities decreased 10-50% at the surface and 30-70% at the bottom between June and September in plant beds, but did not decrease in areas devoid of plants. Reduction in average current velocity during the season ranged from 50 to 80% (Table 34). Reductions were similar in the Detroit River but were not as obvious because the seasonal ranges of light and current velocities were smaller.

We treated average water depth, light transmission, and current velocity data associated with each of the common macrophyte taxa shown (Table 35), separately by river, but averaged them over months to mask the variation in seasonal changes in light and velocity. The purpose of the table is to provide an average condition under which the taxa occur in the two rivers, and thus enable us to group taxa that occur under similar conditions. The table also includes the result of a correlation analysis between the biomass of each taxon and depth, light, and velocity.

Several taxa in both rivers were associated more frequently than others with various depth levels, light transmissions, and current velocities (Table 36). For example, both <u>P. richardsonii</u> and <u>P. gramineus</u> were more common in areas where current velocities exceeded 0.7 ft/s, but <u>P. richardsonii</u> occurred

1

Table 33. Mean depth (ft), light transmittance (%), and current velocity (ft/s) at stations where submersed macrophytes were sampled in the St. Clair and Detroit rivers.

|                | Depth | Light<br>transmittance | Current | <b>ve</b> locity |
|----------------|-------|------------------------|---------|------------------|
| Location       | -•    |                        | Surface | Bottom           |
| Stag Island    | 8     | 50                     | 1.5     | 1.0              |
| Fawn Island    | 6     | 47                     | 1.2     | 0.7              |
| Russell Island | 7     | 36                     | . 1.3   | 0.6              |
| Belle Isle     | 7     | 19                     | 0.6     | 0.4              |
| Point Hennepin | 6     | 16                     | 0.3     | 0.1              |
| Stony Island   | 6     | 14                     | 0.7     | 0.4              |

Table 34. Mean light transmittance (%) and current velocities (ft/s) measured in beds of submersed macrophytes and in areas without submersed macrophyte beds in the St. Clair River in 1983 and 1984<sup>a/</sup>.

|                             | , !  | ight transmitt | ance      |       | Current veloci | ty        |
|-----------------------------|------|----------------|-----------|-------|----------------|-----------|
| Taxon                       | June | July-August    | September | June  | July-August    | September |
| No plants                   | 64   | 42             | 45        | 2.2ª/ | 2.6            | 2.2       |
| <u>Chara</u> spp.           | 57   | 55             | 43        | 1.2   | 0.7            | 0.6       |
| Elodea<br>canadensis        | 47   | 27             | 20        | 1.0   | 0.4            | 0.3       |
| Myriophyllum<br>spicatum    | 48   | 27             | 19        | 0.7   | 0.3            | 0.2       |
| Nitella<br>flexilis         | 41   | 33             | 28        | 1.4   | 1.1            | 0.4       |
| Potamogeton<br>gramineus    | 53   | 50             | 38        | 1.5   | 0.8            | 0.6       |
| Potamogeton<br>spp.         | 55   | 42             | 33        | 1.4   | 0.7            | 0.6       |
| Potamogeton<br>richardsonii | 49   | 36             | 24        | 1.4   | 0.5            | 0.3       |

 $<sup>^{\</sup>mathrm{a/}}$  Mean of measurements at surface and bottom.

Table 35. Mean depth (ft), light transmittance (%), and current velocity (ft/s) in beds of submersed macrophyte taxon in the St. Clair (S) and Detroit (D) rivers, June 14 - September 20, 1983-1984.

|                              |                 | mple  |                    |      |       | ght     | Curre    |      |
|------------------------------|-----------------|-------|--------------------|------|-------|---------|----------|------|
| Taxon                        |                 | ize   | Dept               |      |       | ittance | velo     |      |
|                              | <b>S</b>        | D<br> | \$                 | D    | s<br> | 0       | <b>S</b> |      |
| <u>Chara</u> spp.            | 559             | 115   | 6(-) <sup>a/</sup> | 7(-) | 52(+) | 24(+)   | 0.8      | 0.4  |
| Elodea<br>canadensis         | 218             | 48    | 9                  | 5    | 31    | 10      | 0.6      | 0.2  |
| <u>dubia</u>                 | F <sup>b/</sup> | 47    | F                  | 5    | F     | 14      | F        | 0.4  |
| Myriophyllum<br>spicatum     | 86              | 150   | 8(-)               | 6    | 31    | 21      | 0.4      | 0.3  |
| Najas<br>flexilis            | 40              | 51    | 4                  | 6    | 48    | 25      | 0.7      | 0.4  |
| Nitella<br>hyalina           | 56              | 89    | 9                  | 6    | 34    | 18      | 1.0      | 0.2  |
| Nitellopsis<br>obtusa        | F               | 71    | <b>F</b>           | 6    | F     | 27      | F        | 0.2  |
| Potamogeton<br>.crispus      | 34              | 80    | 8                  | 6    | 44    | 10      | 0.4      | 0.3  |
| Potamogeton<br>gramineus     | 328             | 33    | 6(+)               | 6    | 47    | 26      | 1.0      | 0.4  |
| Potamogeton spp.             | 424             | 266   | 7                  | 6(-) | 43    | 19      | 0.9      | 0.3( |
| Potamogeton<br>richardsonii  | 253             | 179   | 8                  | 7    | 36    | 12      | 0.7      | 0.4  |
| Potamogeton<br>zosteriformis | 24              | 47    | 7                  | 8    | 53    | 19      | 0.5      | 0.3  |
| Vallisneria<br>americana     | 32              | 551   | 6                  | 7    | 38    | 16(-)   | 0.4      | 0.3  |

 $<sup>^{</sup>a/}$  Significant correlation (P < 0.05) between taxon biomass and physical variables, sign indicates inverse (-) or positive (+) relationship.

b/ Few or none present.

Table 36. Taxa associations with water depth, light transmission, and current velocity in the St. Clair and Detroit rivers, June-September 1983-1984.

### St. Clair River

Mean depth > 7 ft.
Mean light transmission < 42%

Mean depth < 7 ft.
Mean light transmission > 42%

Velocity (ft/s)

> 0.7 P. richardsonii < 0.7 Elodea canadensis Myriophyllum spicatum > 0.7 Chara spp. P. gramineus < 0.7 Potamogeton spp.

## Detroit River

Mean Depth  $\geq$  6 ft. Velocity  $\geq$  0.3 ft/s

Mean light transmission > 21%
Chara spp.
Myriophyllum spicatum

Mean light transmission < 16%
Vallisheria americana
P. richardsonii

more frequently than <u>P. gramineus</u> in water deeper than 7 ft. <u>Vallisneria</u> and <u>P. richardsonii</u> appear to be adapted to the low light transmission in the <u>Detroit River</u>.

Significant correlations of the biomass of macrophyte taxa with physical measurements were few; they are most often with depth and least often with current (Table 35). Chara spp. in both rivers was associated negatively with depth and positively with light. Since these two physical variables are inversely related, Chara spp. biomass may be limited by low light. The negative correlation between Potamogeton spp. and depth may be related to the higher current usually associated with deeper water near the navigation channel in the Detroit River. The biomass of Potamogeton gramineus tended to be higher in deeper water in the St. Clair River. Biomass of Myriophyllum spicatum in the St. Clair River was higher at depths greater than 8 ft than at lesser depths.

JUVENILE AND ADULT FISH

## Composition and Distribution of Catch

We captured 1,775 fish of 36 different species in 1983 and 1,038 fish of 26 species in 1984 (Table 37 and Appendix R). Of the 39 species represented, only 7 were captured commonly (> 50 fish/year): yellow perch, rock bass, hornyhead chub, spottail shiner, striped shiner, rainbow smelt and white sucker, collectively made up 86% of the total for both years combined. Only yellow perch and rock bass were common in both rivers in both years. Thirteen species collected in 1983 were not taken in 1984; of these, 11 were represented by a single individual and the other 2 by 3 and 10 specimens. Three species caught in 1984 but not in 1983 were represented by only one fish each.

A larger number of fish species were collected in the Detroit River than in the St. Clair River, particularly in 1983. Sixteen species were collected only in the Detroit River, of which channel catfish, stonecat, white bass, white perch, and brown bullhead were abundant enough to be considered common (Table 37). Trout-perch, striped shiner, and rainbow trout were collected only in the St. Clair River. Frequency of capture of most species by year, river, or presence of vegetation was erratic (Tables 37, 38, and 39).

In both 1983 and 1984, the numerically dominant species in the catch, yellow perch and rock bass, were collected during every month (Table 40). Two common species, rainbow smelt and spottail shiners, were collected most often in May and June. Catches of other species showed both seasonal and spatial variation. Channel catfish were present only in the Detroit River, where they were captured in all months except July. In the St. Clair River, striped shiners were abundant in June and October and hornyhead chubs from July to October. Some of the large seasonal catches probably reflected migrations or spawning runs. For example, the white suckers captured in May were gravid and the hornyhead chubs captured in July were in spawning coloration and had well-developed breeding tubercles.

Table 37. Total number, percent of total, and mean length (mm) of fish collected in the St. Clair and Detroit rivers during 1983 and 1984.

|                          |                              |        | 1983    |                        |        | 1984    |                        |
|--------------------------|------------------------------|--------|---------|------------------------|--------|---------|------------------------|
| Common name              | Scientific name              | Number | Percent | Mean<br>length<br>(mm) | Number | Percent | Mean<br>lengti<br>(mm) |
| Yellow perch             | Perca flavescens             | 989    | 56      | 120                    | 365    | 35      | 149                    |
| Rock bass                | Ambigolites rupestris        | 296    | 17      | 130                    | 246    | 24      | 155                    |
| Hornyheed chub           | Mocomis biguttatus           | 188    | 11      | 110                    | 43     | 4       | 117                    |
| Spottail shiner          | Notropis hudsonius           | 70     | 4       | 101                    | 15     |         | 105                    |
| Striped shiner           | Motropis chrysocephalus      | 55     | 3       | 100                    | 1      |         | 95                     |
| Rainbow smelt            | Osmerus mordax               | 46     | 3       | 116                    | 146    | 14      | 115                    |
| Small mouth bass         | Micropterus dolomieui        | 20     | 1       | 101                    | 5      |         | 247                    |
| Channel catfish          | <u>Ictalurus punctatus</u>   | 18     | 1       | 419                    | 34     | 3       | 441                    |
| ihite sucker             | Catostomus commersoni        | 12     | 1       | 178                    | 61     | 6       | 434                    |
| Stonecat                 | Moturus flavus               | 11     | 1       | 206                    | 35     | 3       | 216                    |
| White perch              | Morone americana             | 10     | 1       | 143                    | 0      |         | -                      |
| Common carp              | Cyprinus carpio              | 9      |         | 475                    | 3      |         | 519                    |
| Bluegill                 | Lepomis macrochirus          | 6      |         | 145                    | 2      |         | 254                    |
| mite bass                | Morone chrysops              | 6      |         | 242                    | 1      |         | 83                     |
| lack crappie             | Pomoxis nigromeculatus       | 5      |         | 228                    | 5      |         | 167                    |
| umpkinseed               | Lepamis gibbosus             | 4      |         | 137                    | 6      |         | 140                    |
| Prown bullhead           | Ictalurus nebulosus          | 3      |         | 264                    | 5      |         | 279                    |
| reliow bullhead          | Ictalurus natalis            | 3      |         | 231                    | Ō      |         | -                      |
| Black redhorse           | Moxostoma duquesnel          | 3      |         | 397                    | 5      |         | 459                    |
| lorthern pike            | Esox Tuctus                  | 2      |         | 660                    | 1      |         | 775                    |
| llevife                  | Alose pseudoharengus         | 2      |         | 120                    | 44     | 4       | 80                     |
| iolden redhorse          | Moxostoma erythrurum         | 2      |         | 420                    | 1      |         | 496                    |
| rout-perch               | Percopsis omiscomeyous       | 2      |         | 120                    | 2      |         | 111                    |
| ogperch                  | Percina caprodes             | 1      |         | 105                    | 0      |         | -                      |
| entral stoneroller       | Campostoma anomelum          | 1      |         | 126                    | 0      |         | -                      |
| alleye                   | Stizostedion vitreum vitreum | 1      |         | 254                    | 8      |         | 405                    |
| izzard shad              | Dorosoma cepedianum          | 1      |         | 106                    | 0      |         | -                      |
| hite crappie             | Pomoxis annularis            | 1      |         | 205                    | 0      |         | -                      |
| ammon shiner             | Notropis cornutus            | 1      |         | 106                    | 0      |         | -                      |
| reshwater drum           | Aplodinotus grunniens        | 1      |         | 373                    | 1      |         | 375                    |
| igmouth buffalo          | Ictiobus cyrinellus          | 1      |         | 370                    | 0      |         | -                      |
| ottled sculpin           | Cottus bairdii               | 1      |         | 71                     | 0      |         | -                      |
| argemouth bass           | Micropterus salmoides        | 1      |         | 98                     | 0      |         | -                      |
| owfin                    | Anta calva                   | 1      |         | 532                    | Ō      |         | -                      |
| merald shiner            | Notropis atherinoides        | 1      |         | 94                     | Ō      |         | •                      |
| oldfish                  | Carassius auratus            | . 1    |         | 161                    | Q      |         | -                      |
| . perch x w. bass hybrid |                              | 0      |         | •                      | 1      |         | 106                    |
| ainbow trout             | <u>Salmo gairdneri</u>       | 0      |         | -                      | 1      |         | 320                    |
| merican eel              | Anguilla rostrata            | 0      |         | •                      | 1      |         | 602                    |
| Total                    |                              | 1,775  |         |                        | 1038   |         |                        |

Table 38. Numbers and weights (g) of fish collected in the St. Clair and Detroit rivers in 1983 and 1984.

|                  |                       | 1983  | l   |       |     | 1984  | 4   |       |
|------------------|-----------------------|-------|-----|-------|-----|-------|-----|-------|
| Species          | St.                   | Clair |     | roit  | St. | Clair |     | troit |
|                  | No.                   | Wt(g) | No. | Wt(g) | No. | Wt(g) | No. | Wt(g) |
| Yellow perch     | 733                   | 18391 | 256 | 6131  | 250 | 10186 | 115 | 5151  |
| Hornyhead chub   | 176                   | 2857  | 12  | 236   | 38  | 631   | 5   | 130   |
| Rock bass        | 153                   | 11108 | 143 | 9271  | 88  | 12784 | 158 | 13339 |
| Striped shiner   | 55                    | 818   | 0   | 0     | 1   | 10    | 0   | 0     |
| Spottail shiner  | 38                    | 465   | 32  | 357   | 2   | 22    | 13  | 135   |
| Rainbow smelt    | 28                    | 368   | 18  | 82    | 146 | 1260  | 0   | (     |
| Smallmouth bass  | 15                    | 323   | 5   | 51    | 3   | 1944  | 2   | 38    |
| Mhite sucker     | 11                    | 1815  | 1   | 100   | 6   | 6547  | 55  | 46030 |
| Black crappie    | 5                     | 840   | 1   | 350   | 1   | 352   | 1   | 178   |
| Bluegill         | 5<br>2<br>2<br>2<br>2 | 180   | 4   | 99    | 0   | 0     | 1   | 12    |
| Pumpkinseed      | 2                     | 74    | 2   | 200   | 3   | 168   | 3   | 236   |
| Alewife          | 2                     | 31    | 0   | 0     | 31  | 234   | 13  | 36    |
| Trout-perch      |                       | 27    | 0   | 0     | 2   | 24    | 0   | (     |
| Common carp      | 1                     | 2700  | 8   | 11824 | 0   | 0     | 3   | 5100  |
| lorthern pike    | 1                     | 1500  | 1   | 2000  | 1   | 1700  | 0   | (     |
| Bowfin           | 1                     | 1400  | 0   | 0     | 0   | 0     | 0   | (     |
| lalleye          | 1                     | 120   | 0   | 0     | 4   | 1442  | 4   | 3650  |
| argemouth bass   | 1                     | 14    | 0   | 0     | 0   | 0     | 0   | (     |
| Common shiner    | 1                     | 13    | 0   | 0 .   | 0   | 0     | 0   | 0     |
| fottled sculpin  | 1                     | 6     | 0   | 0     | 0   | 0     | 0   | 0     |
| Channel catfish  | 0                     | 0     | 18  | 16458 | 0   | 0     | 34  | 29188 |
| Stonecat         | 0                     | 0     | 11  | 1384  | 0   | 0     | 35  | 3988  |
| Hite perch       | 0                     | 0     | 10  | 470   | 0   | 0     | 0   | C     |
| thite bass       | 0                     | 0     | 5   | 1227  | 0   | 0     | 5   | 490   |
| Black redhorse   | 0                     | 0     | 3   | 1967  | 3   | 2722  | 2   | 1672  |
| Brown bullhead   | 0                     | 0     | 3   | 663   | 0.  | 0     | 5   | 1462  |
| fellow bullhead  | 0                     | 0     | 3   | 388   | 0   | 0     | 0   | 0     |
| Golden redhorse  | 0                     | 0     | 2   | 1582  | 1   | 1200  | 0   | (     |
| Sigmouth buffalo | 0                     | 0     | 1   | 800   | 0   | 0     | 0   | (     |
| Freshwater drum  | 0                     | 0     | 1   | 680   | 1   | 650   | 0   | (     |
| Mhite crappie    | 0                     | 0     | 1   | 150   | 0   | 0     | 0   | (     |
| Goldfish         | 0                     | 0     | 1   | 74    | 0   | 0     | 0   | (     |
| toneroller       | Ō                     | Ö     | Ī   | 13    | Ŏ   | Ŏ     | Ō   | Ċ     |
| .ogperch         | Ŏ                     | Ö     | ī   | 10    | Ŏ   | Ŏ     | Õ   | Č     |
| Sizzard shad     | Ŏ                     | Ŏ     | ī   | 9     | Ŏ   | Ŏ     | Ŏ   | Ò     |
| merald shiner    | ŏ                     | Ŏ     | ī   | 7     | ŏ   | ŏ     | ŏ   | Ò     |
| lainbow trout    | Ŏ                     | ŏ     | Õ   | Ó     | ĭ   | 258   | ŏ   | Ò     |
| merican eel      | Ŏ                     | Ŏ     | ŏ   | Ŏ     | õ   | 0     | ī   | 360   |
|                  | ite                   | •     | •   | •     |     | •     | -   |       |
| bass hybrid      | 0                     | 0     | 0   | 0     | 0   | 0     | 1   | 16    |
| Tota1            | 1229                  | 44768 | 546 | 54655 | 582 | 42139 | 456 | 11121 |

Table 39. Numbers and weights (g) of fish collected in vegetated or non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

|                   |      | 19    | 83    |          |      | 19    | 984   |          |
|-------------------|------|-------|-------|----------|------|-------|-------|----------|
| Species           | Vege | tated | Non-v | egetated | Vege | tated | Non-v | egetated |
| ·                 | No.  | Wt    | No.   | Wt       | No.  | Wt    | No.   | Wt       |
| Yellow perch      | 714  | 16282 | 275   | 8240     | 191  | 7664  | 174   | 7673     |
| Rock bass         | 130  | 8197  | 166   | 12182    | 107  | 9029  | 139   | 17094    |
| Hornyhead chub    | 113  | 1869  | 75    | 1224     | 22   | 386   | 21    | 380      |
| Striped shiner    | 45   | 723   | 10    | 95       | 1    | 10    | Ō     | 0        |
| Spottail shiner   | 44   | 539   | 26    | 283      | 8    | 80    | 7     | 77       |
| Channel catfish   | 7    | 7100  | 11    | 9358     | 10   | 9140  | 24    | 20048    |
| Common carp       | 5    | 6180  | 4     | 8344     | 3    | 5100  | 0     | 0        |
| Smallmouth bass   | 5    | 40    | 15    | 334      | 1    | 28    | 4     | 1954     |
| Rainbow smelt     | 4    | 18    | 42    | 432      | 99   | 836   | 47    | 424      |
| Black redhorse    | 3    | 1967  | 0     | 0        | 5    | 4394  | 0     | 0        |
| Pumpkinseed       | 3    | 140   | 1     | 134      | 2    | 92    | 4     | 312      |
| White sucker      | 3    | 139   | 9     | 1776     | 3    | 3249  | 58    | 49328    |
| White perch       | 3    | 43    | 7     | 427      | 0    | 0     | 0     | 0        |
| Brown bullhead    | 2    | 449   | 1     | 214      | 5    | 1462  | 0     | 0        |
| Stonecat          | 2    | 214   | 9     | 1170     | 21   | 2460  | 14    | 1528     |
| Northern pike     | 1    | 2000  | 1     | 1500     | 1    | 1700  | 0     | 0        |
| Bowfin            | 1    | 1400  | 0     | 0        | 0    | 0     | 0     | 0        |
| Freshwater drum   | 1    | 680   | 0     | 0        | 0    | 0     | 1     | 650      |
| Golden redhorse   | 1    | 708   | 1     | 874      | 1    | 1200  | 0     | 0        |
| Black crappie     | 1    | 214   | 5     | 976      | 1    | 352   | 1     | 178      |
| Yellow bullhead   | 1    | 190   | 2     | 198      | 0    | 0     | 0     | 0        |
| White crappie     | 1    | 150   | 0     | 0        | 0    | 0     | 0     | 0        |
| Goldfish          | 1    | 74    | 0     | 0        | 0    | 0     | 0     | 0        |
| Alewife           | 1    | 16    | 1     | 15       | 3    | 70    | 41    | 200      |
| Bluegill          | 1    | 14    | 5     | 265      | 1    | 12    | 0     | 0        |
| Largemouth bass   | 1    | 14    | 0     | 0        | 0    | 0     | 0     | 0        |
| Common shiner     | 1    | 13    | 0     | 0        | 0    | 0     | 0     | 0        |
| Stoneroller       | 1    | 13    | 0     | 0        | 0    | 0     | 0     | 0        |
| White bass        | Ō    | Ō     | 5     | 1227     | 4    | 148   | 1     | 342      |
| Trout-perch       | Ō    | Ō     | 2     | 27       | 1    | 12    | ī     | 12       |
| Bigmouth buffalo  | 0    | Ō     | 1     | 800      | Ō    | 0     | Ō     | 0        |
| Walleye           | Ö    | Ö     | 1     | 120      | 4    | 2342  | 4     | 2750     |
| Logperch          | Ō    | Ö     | ī     | 10       | Ó    | 0     | Ó     | 0        |
| Gizzard shad      | Ŏ    | Ŏ     | ĩ     | 9        | Ŏ    | Ŏ     | ŏ     | Ō        |
| Emerald shiner    | ŏ    | ŏ     | ī     | 7        | ŏ    | ō     | ŏ     | Ŏ        |
| Mottled sculpin   | ŏ    | Ŏ     | Ĭ     | 6        | Ŏ    | Ō     | ŏ     | Ŏ        |
| American eel      | ŏ    | Ŏ     | ō     | Ŏ        | i    | 360   | ŏ     | ŏ        |
| Rainbow trout     | ŏ    | ŏ     | Õ     | ŏ        | ō    | 0     | ĭ     | 258      |
| White perch X whi | •    | •     | •     | •        | •    | •     | •     | 200      |
| bass hybrid       | 0    | 0     | 0     | 0        | 0    | 0     | 1     | 16       |
| Total             | 1096 | 50309 | 679   | 49779    | 495  | 50126 | 543   | 103224   |

Table 40. Numbers of common species of fish collected in the St. Clair and Detroit rivers, May-October 1983 and 1984.

|                                   | St. Ci   | ir River | Detro            | etroit River |  |  |
|-----------------------------------|----------|----------|------------------|--------------|--|--|
| Month and species                 | 1983     | 1984     | 1983             | 1984         |  |  |
| May                               |          |          |                  |              |  |  |
| Rainbow smelt                     | 20       | 0        | 18               | 0            |  |  |
| Spottail shiner                   | 20       | 0        | 12               | 3            |  |  |
| White sucker                      | 1        | 0        | 0                | 55           |  |  |
| Rock bass                         | 1        | 3        | 24               | 40           |  |  |
| Yellow perch                      | 1        | 5        | 22               | 26           |  |  |
| Stonecat                          | 0        | 0        | 1                | 2            |  |  |
| June                              |          |          |                  |              |  |  |
| Yellow perch                      | 67       | 14       | 8                | 10           |  |  |
| Striped shiner                    | 18       | 0        | Ō                | Ö            |  |  |
| Hornyhead chub                    | 13       | 0        | Ö                | ĺ            |  |  |
| Rainbow smelt                     | 8        | 146      | 0                | 0            |  |  |
| Rock bass                         | 6        | 4        | 32               | 43           |  |  |
| Trout-perch                       | 1        | 2        | 0                | 0            |  |  |
| Spottail shiner                   | 0        | 1        | 9                | 4            |  |  |
| White perch                       | 0        | 0        | 8                | 0            |  |  |
| White bass                        | 0        | 0        | 5                | 3            |  |  |
| Stonecat                          | 0        | 0        | 1                | 21           |  |  |
| July                              |          |          |                  |              |  |  |
| Yellow perch                      | 186      | 68       | 84               | 18           |  |  |
| Hornyhead chub                    | 59       | 6        | 7                | 1            |  |  |
| Rock bass                         | 40       | 45       | 33               | 28           |  |  |
| Alewife                           | 2        | 0        | 0                | 11           |  |  |
| Pumpkinseed                       | 1        | 0        | 0                | 2            |  |  |
| Spottail shiner                   | 1        | 0        | 8                | 5            |  |  |
| Channel catfish                   | 0<br>0   | 0<br>0   | 4                | 2            |  |  |
| Black redhorse<br>Smallmouth bass | 0        | 3        | 1<br>0           | 1            |  |  |
| Common carp                       | 0        | 0        | 0                | 0<br>3       |  |  |
| Candambas                         |          |          |                  |              |  |  |
| September                         | 202      | 100      | 40               |              |  |  |
| Yellow perch                      | 223      | 106      | 40               | 14           |  |  |
| Rock bass<br>Hornyhead chub       | 51<br>41 | 20       | 23               | 19           |  |  |
| Smallmouth bass                   | 13       | 2<br>0   | 1                | 2<br>0       |  |  |
| Spottail shiner                   | 13       | 1        | 3                | 0            |  |  |
| White sucker                      | 5        | Ó        | 0                | 0            |  |  |
| Northern pike                     | 1        | 1        | 0                | 0            |  |  |
| Black crappie                     | i        | i        | ŏ                | Ö            |  |  |
| Pumpkinseed                       | i        | ż        | 2                | ŏ            |  |  |
| Channel catfish                   | ō        | 2        | ğ                | 29           |  |  |
| Common carp                       | 0        | ŏ        | ž                | 0            |  |  |
| Stonecat                          | 0        | ŏ        | 2<br>9<br>3<br>3 | ž            |  |  |
| Black redhorse                    | Ŏ        | 3        | ĭ                | ī            |  |  |
| Alewife                           | Ō        | 30       | Ö                | ō            |  |  |
| ctober                            |          |          |                  |              |  |  |
| Brown bullhead                    | 0        | 0        | 0                | 5            |  |  |
| Yellow perch                      | 256      | 57       | 102              | 47           |  |  |
| Hornyhead chub                    | 63       | 30       | 3                | i            |  |  |
| Rock bass                         | 55       | 16       | 31               | 28           |  |  |
| Striped shiner                    | 35       | Ō        | Ō                | ō            |  |  |
| Black crappie                     | 4        | 0        | 1                | i            |  |  |
| White sucker                      | 4        | 6        | · 1              | 0            |  |  |
| Spottail shiner                   | 4        | Ó        | 0                | 1            |  |  |
| Smallmouth bass                   | 2        | 0        | 5                | 2            |  |  |
| Common carp                       | 1        | Ō        | 3                | o            |  |  |
| Stonecat                          | 0        | Q        | 6                | 9            |  |  |
| Channel catfish                   | 0        | 0        | 5                | . 3          |  |  |

An average of 2.4 species were collected per net set in 1983-1984. The average number of species caught was nominally higher in 1983 than 1984 at all locations (Table 41), but was significantly higher only at Stony Island. The number of fish species per net set was highest during July-October at most locations in both years (Fig. 13). Catches were significantly greater in October than in May and July at Russell Island, and in July than in May at Stag Island (Table 41). There were no significant differences in the number of species collected per net set in the vegetated or non-vegetated areas at each location, and catches were not consistently higher in either type of habitat over all locations (Table 41). The number of species collected differed slightly between nets set in vegetated and non-vegetated areas in July and September (Fig. 14).

### <u>Abundance</u>

The mean catch for all species combined was larger in 1983 than in 1984, increased from May to October, was larger in the St. Clair River than in the Detroit River, and was larger in nets set in vegetated than in non-vegetated areas (Table 42). To determine if these differences were significant, we analyzed the variance of total catch and the abundance of yellow perch and rock bass, the two most abundant species, against year, month, river, locations, and presence or absence of vegetation (Appendix T). Computationally, this is a lengthy analysis, and to simplify it, we analyzed each location separately. We found few significant differences in catch between years, among months, or between vegetated and non-vegetated areas.

The mean catch of all species combined was not significantly different between 1983 and 1984 at any of the locations (Table 43). The catch in 1984 was 69% lower than in 1983 at Stag Island and 29% higher than in 1983 at Stony Island. Differences in catch between years at each island declined progressively from upstream to downstream locations (Fig. 15). Thus, there was a 53% decline in the St. Clair River from 1983 to 1984 and a 16% decline in the Detroit River. Catches in July, August, and September, were 54, 44, and 65% lower, respectively, in 1984 than in 1983 (Fig. 16). Fluctuations between years were substantially lower in the Detroit than in the St. Clair river. Monthly trends in catch at each location changed little between years. Nets set in vegetated areas at Fawn Island contained significantly more fish than did those set in non-vegetated areas. At all other islands, catches in nets set in vegetated and non-vegetated areas did not differ significantly (Table 43). For all islands, catches were 50% less in 1984 than in 1983 in vegetated areas and 27% less in non-vegetated areas (Table 44). More fish were caught in nets set in vegetation in both rivers in 1983 and in the St. Clair River in 1984, but not in the Detroit River in 1984. Seasonal differences between catches in vegetated and non-vegetated areas were small in May and October and largest in June, July, and September (Fig. 17).

The mean catch of yellow perch was consistently higher in 1983 than in 1984, but this difference was significant only at Russell Island and Belle Isle (Table 45). Catches were higher in July, September, and October at most

Table 41. Mean numbers of fish species collected by year, month and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ( $P \le 0.05$ ).

| Location       | Yea  | ırs  |      | M    | onths |      |      | Aı  | rea |
|----------------|------|------|------|------|-------|------|------|-----|-----|
| Stag Island    | 2.5  | 2.0  | 3.6  | 3.0  | 1.9   | 1.6  | 1.1  | 2.3 | 2.2 |
|                | 1983 | 1984 | Oct. | Sep. | June  | May  | July | (N) | (V) |
| Fawn Island    | 2.1  | 1.9  | 2.5  | 2.5  | 2.0   | 2.0  | 1.0  | 2.4 | 1.7 |
|                | 1983 | 1984 | Sep. | July | Oct.  | June | May  | (V) | (N) |
| Russell Island | 2.8  | 2.2  | 2.9  | 2.8  | 2.8   | 2.8  | 1.3  | 2.7 | 2.2 |
|                | 1983 | 1984 | July | Sep. | Oct.  | June | May  | (Y) | (N) |
| Belle Isle     | 2.4  | 2.1  | 2.9  | 2.5  | 2.3   | 2.1  | 1.5  | 2.4 | 2.1 |
|                | 1983 | 1984 | Oct. | July | Sept. | May  | June | (N) | (V) |
| Point Hennepin | 2.2  | 1.8  | 2.6  | 2.3  | 1.9   | 1.6  | 1.5  | 2.1 | 1.9 |
|                | 1983 | 1984 | Oct. | July | May   | June | Sep. | (V) | (N) |
| Stony Island   | 3.7  | 2.7  | 4.1  | 3.5  | 3.1   | 2.9  | 2.4  | 3.4 | 3.0 |
|                | 1983 | 1984 | Sep. | Oct. | June  | July | May  | (V) | (N) |

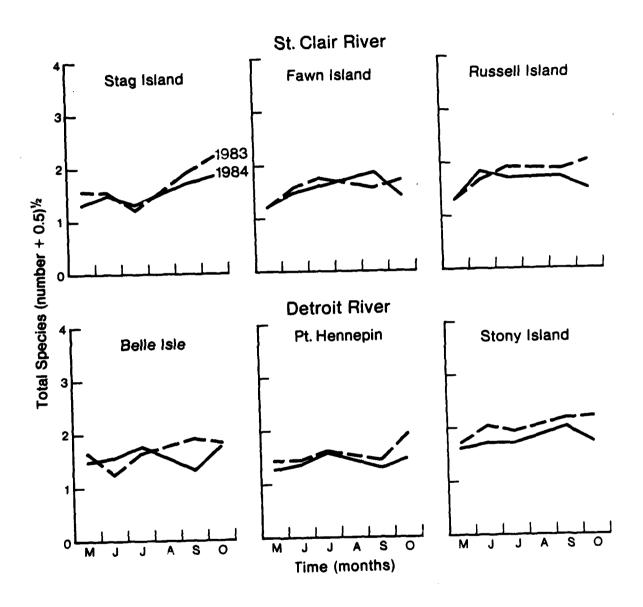


Figure 13. Seasonal diversity (square root of total number of species captured per net set + 0.5) of fish at six locations in the SCDRS.

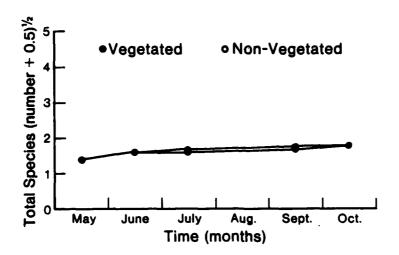


Figure 14. Seasonal diversity (square root of total number of species captured per net set + 0.5) of fishes in vegetated and non-vegetated areas.

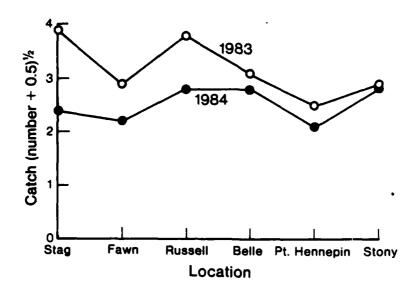


Figure 15. Mean catch (square root of mean catch + 0.5) of fish at six locations in the SCDRS.

Table 42. Mean total catch of fish by year, month, river, location, and vegetated and non-vegetated areas in the St. Clair and Detroit rivers.

| Effect  | N                                | Mean                                      |
|---|----------------------------------|---|
| Year  |                                  | · <u>.</u>                                |
| 1983<br>198 <b>4</b>  | 120<br>120                       | 14.8<br>8.6                               |
| Month   |                                  |   |
| May<br>June<br>July<br>September<br>October                                 | 48<br>48<br>48<br>48<br>48       | 5.5<br>9.1<br>13.1<br>14.2<br>16.6        |
| River   |                                  |   |
| St. Clair<br>Detroit  | 120<br>120                       | 15.1<br>8.4                               |
| Location  |                                  |   |
| Stag Island Fawn Island Russell Island Belle Isle Pt. Hennepin Stony Island | 40<br>40<br>40<br>40<br>40<br>40 | 18.5<br>11.0<br>15.8<br>9.3<br>6.6<br>9.2 |
| Plants  |                                  |   |
| Non-vegetated<br>Vegetated  | 126<br>114                       | 9.7<br>14.0                               |

Table 43. Total catch of adult and juvenile fish by year, month, and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ( $P \le 0.05$ ).

| Location       | Ye   | ars  |             | M    | onths      |      |            | Are  | 9    |
|----------------|------|------|-------------|------|------------|------|------------|------|------|
| Stag Island    | 28.2 | 8.8  | 47.5        | 35.2 | 3.6        | 3.5  | 2.5        | 21.0 | 16.0 |
|                | 1983 | 1984 | 0ct.        | Sep. | May        | June | July       | (N)  | (V)  |
| Fawn Island    | 14.0 | 8.1  | 18.8        | 16.9 | 10.2       | 9.2  | 0.1        | 20.4 | 4.2  |
|                | 1983 | 1984 | <u>July</u> | Sep. | June       | Oct. | <u>May</u> | (V)  | (N)  |
| Russell Island | 19.2 | 12.2 | 30.2        | 22.1 | 12.8       | 10.2 | 3.4        | 17.8 | 13.5 |
|                | 1983 | 1984 | July        | June | Sep.       | 0ct. | May        | (V)  | (N)  |
| Belle Isle     | 11.0 | 7.6  | 15.0        | 10.4 | 7.6        | 7.0  | 6.5        | 9.6  | 8.9  |
|                | 1983 | 1984 | Oct.        | July | <b>May</b> | June | Sep.       | (N)  | (V)  |
| Point Hennepin | 8.2  | 5.0  | 10.5        | 10.2 | 5.2        | 3.8  | 3.2        | 7.4  | 5.9  |
|                | 1983 | 1984 | Oct.        | July | May        | Sep. | June       | (V)  | (N)  |
| Stony Island   | 10.3 | 8.0  | 13.2        | 10.2 | 8.5        | 7.4  | 6.4        | 10.2 | 7.9  |
|                | 1984 | 1983 | May         | Sep. | June       | Oct. | July       | (N)  | (V)  |

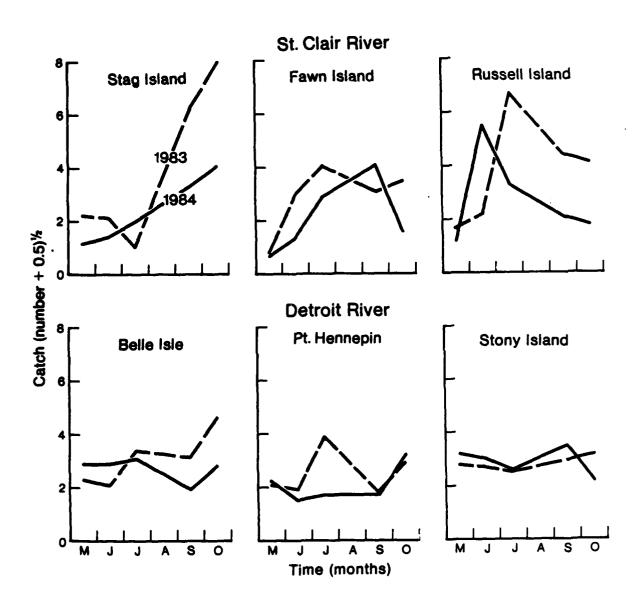


Figure 16. Mean seasonal catch (square root of mean catch + 0.5) of fish at six locations in the SCDRS.

Table 44. Number of fish caught by month in vegetated and non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

|           |               | St. Cla | ir River        |                |               | Detro | it River        |                |
|-----------|---------------|---------|-----------------|----------------|---------------|-------|-----------------|----------------|
| Month     | Veget<br>1983 | 1984    | Non-vec<br>1983 | etated<br>1984 | Veget<br>1983 | 1984  | Non-vec<br>1983 | etated<br>1984 |
| May       | 24            | 7       | 23              | 3              | 32            | 8     | 50              | 120            |
| June      | 86            | 109     | 32              | 60             | 18            | 56    | 50              | 26             |
| July      | 179           | 78      | 111             | 44             | 80            | 28    | 61              | 47             |
| September | 232           | 88      | 116             | 82             | 53            | 30    | 37              | 44             |
| October   | 295           | 40      | 130             | 71             | 96            | 51    | 66              | 46             |
| Total     | 816           | 322     | 412             | 260            | 279           | 173   | 264             | 283            |

Table 44. Number of fish caught by month in vegetated and non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

|           |                | St. Cla      | ir River        |                |                | Detro | it River        |                |
|-----------|----------------|--------------|-----------------|----------------|----------------|-------|-----------------|----------------|
| Month     | Vegeta<br>1983 | ated<br>1984 | Non-vec<br>1983 | etated<br>1984 | Vegeta<br>1983 | 1984  | Non-vec<br>1983 | etated<br>1984 |
| May       | 24             | 7            | 23              | 3              | 32             | 8     | 50              | 120            |
| June      | 86             | 109          | 32              | 60             | 18             | 56    | 50              | 26             |
| July      | 179            | 78           | 111             | 44             | 80             | 28    | 61              | 47             |
| September | 232            | 88           | 116             | 82             | · 53           | 30    | 37              | 44             |
| October   | 295            | 40           | 130             | 71             | 96             | 51    | 66              | 46             |
| Total     | 816            | 322          | 412             | 260            | 279            | 173   | 264             | 283            |
|           |                |              |                 |                |                |       |                 |                |

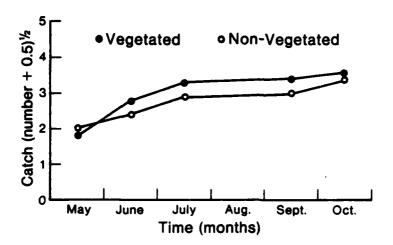


Figure 17. Mean monthly catch (square root of mean catch + 0.5) of fishes in vegetated and non-vegetated areas.

Table 45. Mean number of yellow perch collected by year, month, and in vegetated (Y) and non-vegetated (N) in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ( $P \le 0.05$ ).

| Location               | Yea  | ırs  | Months |      |      |      | Area |      |     |
|------------------------|------|------|--------|------|------|------|------|------|-----|
| Stag Island            | 17.5 | 3.5  | 28.1   | 24.3 | 0.4  | 0.0  | 0.0  | 13.7 | 7.4 |
|                        | 1983 | 1984 | 0ct.   | Sep. | July | May  | June | (V)  | (N) |
| Fawn Island            | 9.9  | 6.0  | 14.4   | 11.5 | 7.9  | 6.3  | 0.0  | 15.8 | 2.3 |
|                        | 1983 | 1984 | July   | Sep. | June | Oct. | May  | (V)  | (N) |
| Russell Island         | 9.1  | 2.9  | 17.0   | 5.4  | 4.8  | 2.3  | 0.8  | 7.2  | 4.7 |
|                        | 1983 | 1984 | July   | Sep. | 0ct. | June | May  | (V)  | (N) |
| Belle Isle             | 6.2  | 1.8  | 9.8    | 4.9  | 2.9  | 1.9  | 0.8  | 4.4  | 3.7 |
|                        | 1983 | 1984 | Oct.   | July | Sep. | May  | June | (V)  | (N) |
| Point Henn <b>epin</b> | 5.3  | 3.5  | 8.5    | 7.3  | 3.0  | 2.4  | 1.0  | 5.5  | 3.4 |
|                        | 1983 | 1984 | Oct.   | July | Sep. | May  | June | (Y)  | (N) |
| Stony Island           | 1.3  | 0.3  | 1.8    | 0.9  | 0.6  | 0.5  | 0.4  | 1.3  | 0.5 |
|                        | 1983 | 1984 | May    | Sep. | July | June | 0ct. | (V)  | (N) |

locations, but the differences were significant only at Stag Island, Russell Island and Belle Isle (Fig. 18). Significantly more yellow perch were caught in nets set in vegetation than in non-vegetated areas at Fawn Island (Table 45); differences were greatest in June, July, and September (Fig. 19).

Rock bass densities were higher in 1983 than 1984, but were significantly higher only at Russell Island and Belle Isle (Table 46). Monthly differences were significant only at Stag and Russell islands, and catches were dominant in either July, September, or October (Table 46). Monthly trends at each location did not differ by year (Fig. 20). Catches of rock bass over all locations did not differ significantly between vegetated and non-vegetated areas (Fig. 21). The total combined catch of the remaining species was higher in 1983 than in 1984 (Table 37); however, more rainbow smelt, channel catfish, white suckers, stonecats, alewives, and walleyes were caught in 1984 than in 1983. Catches of all species were greater in the St. Clair than in the Detroit River except for common carp in 1983 and rock bass, spottail shiners, and white suckers in 1984 (Table 38). Few consistent trends relating abundance of these species to the presence or absence of plants were evident (Table 39), although channel catfish, smallmouth bass, and white suckers were more abundant in both years in non-vegetated areas.

Most of the fish that we caught were adults rather than juveniles, as evidenced by their mean length (Table 37). The only juveniles we captured frequently were yellow perch and rock bass. Although fewer fish were caught in 1984 than in 1983, most were larger in 1984 than in 1983. Total fish biomass was also greater in 1984 than in 1983 (Table 38). Several large white suckers and channel catfish captured in the Detroit River caused the total biomass there to be larger than in the St. Clair River, even though more fish were captured in the St. Clair River.

Total biomass of all species, except rock bass and white sucker, was lower in 1984 than in 1983 (Table 38). The relation between total biomass of most species and their presence in vegetation was strong in 1983 but weak in 1984 (Table 39). Weights of yellow perch, hornyhead chubs, striped shiners, and spottail shiners were higher in vegetated than in non-vegetated areas in 1983, but were about equal in the two types of areas in 1984. A consistent trend over both years was that of the catch of rock bass, channel catfish, smallmouth bass and white suckers being greater in non-vegetated than in vegetated areas. Total weights of fish caught increased from May to October (Table 47). Large monthly differences in biomass between years and rivers resulted from the catch of a few large species such as white sucker, channel catfish and common carp.

## Relationship between Fish and Physical Environment

A correlation analysis between fish catch data and environmental variables (water depth, temperature, current velocity, and light transmission) over various combinations of bottom type (silt-clay, sand, rubble), in vegetated and non-vegetated areas resulted in few significant correlations. Yellow perch numbers correlated positively with temperature in two instances, and

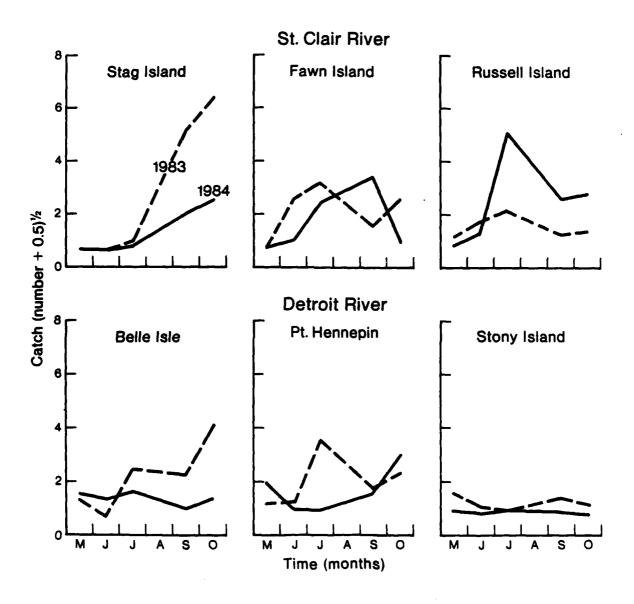


Figure 18. Mean seasonal catch (square root of mean catch + 0.5) of yellow perch at six locations in the SCDRS.

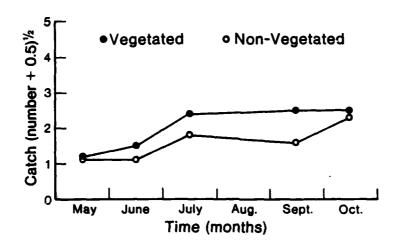


Figure 19. Mean monthly catch (square root of mean catch + 0.5) of yellow perch in vegetated and non-vegetated areas.

Table 46. Mean number of rock bass collected by year, month, and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ( $P \le 0.05$ ).

| Location       | Yea          | ırs  |      | M    | onths |      |      | Ar  | ·ea |
|----------------|--------------|------|------|------|-------|------|------|-----|-----|
| Stag Island    | 1.6          | 1.5  | 4.1  | 2.0  | 1.0   | 0.4  | 0.4  | 1.8 | 1.3 |
|                | 1983         | 1984 | 0ct. | July | Sep.  | June | May  | (N) | (V) |
| Fawn Island    | 2.1          | 1.2  | 3.6  | 2.6  | 2.1   | 0.0  | 0.0  | 2.6 | 1.0 |
|                | 1983         | 1984 | Sep. | July | 0ct.  | May  | June | (V) | (N) |
| Russell Island | 3.8          | 1.7  | 6.0  | 4.3  | 2.6   | 0.9  | 0.1  | 4.1 | 1.6 |
|                | 1983         | 1984 | July | Sep. | 0ct.  | June | May  | (N) | (V) |
| Belle Isle     | 5,3          | 3.3  | 6.1  | 4.8  | 4.3   | 3.0  | 3.5  | 4.6 | 4.0 |
|                | 1 <b>984</b> | 1983 | June | July | Oct.  | Sep. | May  | (N) | (V) |
| Point Hennepin | 1.1          | 0.6  | 1.8  | 0.9  | 0.8   | 0.8  | 0.4  | 0.9 | 0.9 |
|                | 1983         | 1984 | May  | July | 0ct.  | June | Sep. | (V) | (N) |
| Stony Island   | 2.6          | 1.9  | 2.8  | 2.5  | 2.4   | 2.0  | 1.9  | 2.4 | 2.2 |
|                | 1983         | 1984 | May  | June | Oct.  | July | Sep. | (N) | (V) |

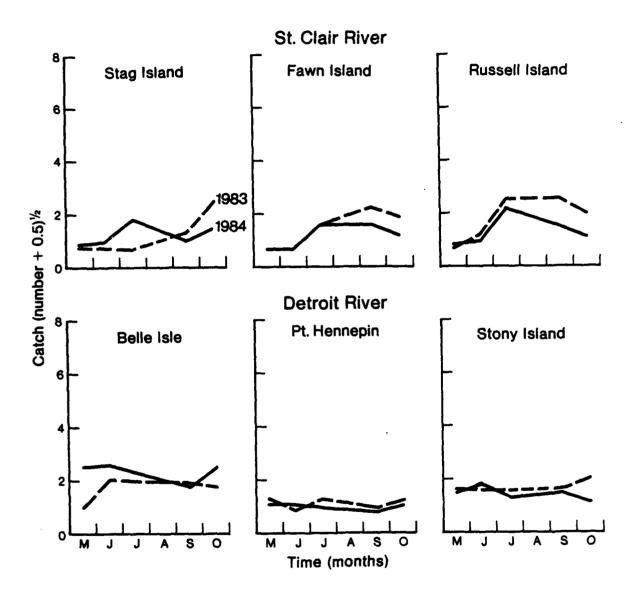


Figure 20. Mean seasonal catch (square root of mean catch + 0.5) of rock bass at six locations in the SCDRS.

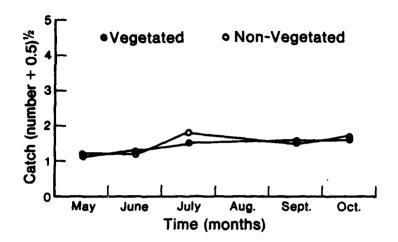


Figure 21. Mean monthly catch (square root of mean catch + 0.5) of rock bass in vegetated and non-vegetated areas.

Table 47. Total weights of common fishes collected in the St. Clair and Detroit rivers in May-October, 1983 and 1984.

| Month and species                          |            | ir River<br>1984 |             | it River<br>1984  |
|--|------------|------------------|-------------|-------------------|
| Month and species                          | 1983       | 1954             | 1983        | 1984              |
| fay  |            |                  |             |                   |
| Rainbow smelt                              | 296        | 0                | 82          | .0                |
| Spottail shiner                            | 200        | 0                | 145         | 32                |
| White sucker                               | 840        | 0<br>848         | 1619        | 46030             |
| Rock bass                                  | 6<br>6     | 82               | 1618<br>750 | 4477<br>827       |
| Yellow perch                               | Ö          | 92               | 220         | 298               |
| Stonecat<br>Walleye                        | ŏ          | ŏ                | 220         | 1660              |
| Golden redhorse                            | ŏ          | 1200             | ŏ           | .000              |
| lune                                       |            |                  |             |                   |
| Yellow perch                               | 736        | 719              | 226         | 521               |
| Striped shiner                             | 197        | 0                | 0           | 0                 |
| Hornyhead chub                             | 233        | O O              | Ō           | 40                |
| Rainbow smelt                              | 72         | 1260             | 0           | 0                 |
| Rock bass                                  | 478        | 872              | 1910        | 3744              |
| Trout-perch                                | 10<br>0    | 24<br>14         | 0<br>102    | 0<br>49           |
| Spottail shiner<br>White perch             | Ö          | 0                | 435         | 0                 |
| White bass                                 | ŏ          | ŏ                | 1227        | 470               |
| Walleye                                    | ŏ          | 762              | 1227        | 7/0               |
| Stonecat                                   | ŏ          | 702              | 54          | 2428              |
| Bowfin                                     | 1400       | ŏ                | ŏ           | 0                 |
| White sucker                               | 840        | ŏ                | ŏ           | 0                 |
| Common carp                                | Ö          | 0                | 4700        | 0                 |
| Black redhorse                             | Q          | 0                | 900         | Ò                 |
| Bigmouth buffalo                           | 0          | 0                | 800         | 0                 |
| Freshwater drum                            | 0          | 0                | 680         | 0                 |
| uly  |            |                  |             |                   |
| Yellow perch                               | 5516       | 2685             | 2187        | 939               |
| Hornyhead chub                             | 944        | 149              | 144         | 12                |
| Rock bass                                  | 3596       | 6647             | 2838        | 1271              |
| Alewife                                    | 31<br>60   | 0                | 0           | 16<br>2 <b>24</b> |
| Pumpkinseed<br>Spottail shiner             | 9          | ŏ                | 77          | 46                |
| Channel catfish                            | ó          | ŏ                | 1770        | 1582              |
| Black redhorse                             | ŏ          | ŏ                | 530         | 652               |
| Smallmouth bass                            | ŏ          | 1944             | 330         | Õ                 |
| Common carp                                | Ŏ          | Ŏ                | ŏ           | 5100              |
| Walleye                                    | ō          | ō                | Õ           | 890               |
| eptember                                   |            |                  |             |                   |
| Yellow perch                               | 4594       | 3660             | 1041        | 543               |
| Rock bass                                  | 3887       | 2510             | 1049        | 2246              |
| Hornyhead chub                             | 616        | 41               | 12          | 46                |
| Smallmouth bass                            | 309        | 0                | _0          | 0                 |
| Spottail shiner                            | 206        | 8                | 33          | 0                 |
| White sucker                               | 84<br>1500 | 1700             | Ŏ           | 0                 |
| Northern pike                              | 120        | 1700<br>352      | 0           | ŏ                 |
| Black crappie<br>Pumpkinseed               | 14         | 100              | 200         | ŏ                 |
| Channel catfish                            | 10         | 100              | 7704        | 25484             |
| Common carp                                | ŏ          | ŏ                | 3024        | 23707             |
| Stonecat                                   | Ŏ          | Ŏ                | 268         | 250               |
| Black redhorse                             | 0          | 2722             | 537         | 1020              |
| Alewife                                    | 0          | 174              | 0           | 0                 |
| Walleye                                    | 0          | 680              | 0           | 0                 |
| Golden redhorse                            | 0          | 0                | 1582        | 0                 |
| Freshwater drum                            | 0          | 630              | 0           | .460              |
| Brown bullhead<br>Rainbow trout            | 0<br>0     | 0<br>2 <b>58</b> | 0           | 1462<br>0         |
|  | _          |                  | -           |                   |
| tober<br>Brown bullhead                    | 0          | 0                | 468         | 0                 |
| Yellow perch                               | 7539       | 3040             | 1927        | 2321              |
| Hornyhead chub                             | 1064       | 446              | 62          | 32                |
| Rock bass                                  | 3141       | 1907             | 1856        | 1601              |
| Striped shiner                             | 608        | 0                | . 0         | 0                 |
| Black crappie                              | 720        | ŏ                | 350         | 12                |
| White sucker                               | 51         | 6547             | 100         | ō                 |
| Spottail shiner                            | 50         | 0                | Ö           | 8                 |
| Smallmouth bass                            | 14         | 0                | 51          | 38                |
|  | 2700       | 0                | 4100        | 0                 |
| Common carp                                |            |                  |             |                   |
| Common carp<br>Stonecat                    | 0          | <u>o</u>         | 842         | 912               |
| Common carp<br>Stonecat<br>Channel catfish | 0          | 0                | 6984        | 2122              |
| Common carp<br>Stonecat                    | 0          |                  |             |                   |

rock bass numbers correlated negatively with current velocities in four instances and positively with temperature in two instances. Total number of species and total weight had several positive associations with temperature. Associations with temperature were most common and those with current velocities the least common. The substrate with which the four species were most commonly associated was sandy, with or without vegetation.

For a summary analysis, we determined mean catch and weight of all species combined, total number of species collected, mean catch of yellow perch, rock bass, hornyhead chubs, and spottail shiners associated with six sediment-vegetation combinations. The highest and lowest catches and diversity (number of species) were then listed with the various sediment-vegetation combinations (Table 48). For example, the highest mean catch of hornyhead chubs per net set was highest in sandy areas in vegetation and lowest in non-vegetated rubble areas. We also found that low current velocities were associated with fine sediments and faster currents with coarse material. Vegetation tended to be in areas with slower currents. Yellow perch were collected most often in vegetation, regardless of sediment type; rock bass were taken over rubble without regard to vegetative cover; and hornyhead chubs and spottail shiners were most often caught over fine sediments in vegetated areas.

#### DISCUSSION

### DISTRIBUTION AND ABUNDANCE OF MACROZOOBENTHOS

The number of taxa of macrozoobenthos listed in this study (160) exceeded that in any work on SCDRS, including that of Hiltunen (1980), Hiltunen and Manny (1982), Ontario Ministry of the Environment (1979), Thornley and Hamdy (1984), and Thornley (1985). The number of such taxa reported for any aquatic system depends primarily on the level of taxonomic treatment and the timing and extent of the sampling program. In the present study, we attempted to identify most specimens at least to genus (which potentially lengthened our list relative to those in the other published works), but we also limited our sampling to near-channel areas and to spring and fall (which potentially shortened the list). Our list (Appendix C) was also made somewhat longer than those in earlier works by the inclusion of Copepoda and Cladocera. However, our list might have exceeded 300 species, if we had identified all specimens to species, particularly within the Chironomidae, Ephemeroptera, Trichoptera, Odonata, and Oligochaeta, and added the other remaining taxa.

Our collections contained all of the major taxa listed in past studies in SCDRS but did not include several less abundant taxa such as <u>Crangonyx</u>, Dolichopodidae (Hiltunen 1980), and <u>Pseudocleon</u> (Ontario Ministry of the Environment 1979). In addition, we collected several common chironomid genera (<u>Robackia</u>, <u>Chernoskia</u>, and <u>Lopescladius</u>) that had not been reported from the system. These chironomids were common in the less productive sand-gravel sediments and their abundance may have been underestimated because their thin body form and small size allowed them to escape through the sieve (this is a common problem

Table 48. Fish catches and associated environmental conditions in the St. Clair and Detroit rivers in 1983-1984.

| Physical characteristics                                | Vegetation |        |                  |             |                    |         |  |  |
|---|------------|--------|------------------|-------------|--------------------|---------|--|--|
| and catch   |            | Absent | <del></del>      | <del></del> | Present            |         |  |  |
| Bottom type   | Silt-clay  | Sand   | Rubble           | Silt-clay   | Sand               | Rubble  |  |  |
| Mean depth (ft)   | 4.3        | 4.0    | 5.0              | 4.4         | 4.0                | 4.7     |  |  |
| Mean current (ft/s)                                     | 0.6        | 1.1    | 1.1              | 0.4         | 1.1                | 1.1     |  |  |
| Catch  Mean wt, all species  Mean catch, all species    |            | Lowest | Highest          |             | Highest            | Lowest  |  |  |
| Diversity Catch of hornyhead chub Catch of yellow perch |            | Lowest | Lowest<br>Lowest |             | Highest<br>Highest | Highest |  |  |
| Catch of spottail shiner<br>Catch of rock bass          |            | Lowest | romest           |             | Highest<br>Lowest  | Highest |  |  |

with "rare" taxa, which often are merely not adequately sampled).

Comparison of zoobenthos diversity in large river systems is difficult because taxonomic detail is usually inadequate. The following studies are exceptions. Barton (1980) collected 114 taxa of benthic macroinvertebrates from the Athabasca River in northern Alberta, Canada. Hudson and Nichols (In Press) recorded 206 taxa from the Savannah River, South Carolina-Georgia. The list of 334 taxa from the wave-zone habitat (0 to 2-m depth zone) of the exposed shores of the Canadian portion of the Great Lakes (Barton and Hynes 1978) surpassed that for SCDRS. Although several taxonomic groups (e.g. oligochaetes, chironomids) were treated at different taxonomic levels in the two studies, the overall similarity was striking. The higher diversities of mayflies and stoneflies in the wave-zone and clams and leeches in SCDRS are noteworthy exceptions. Barton (1980) pointed out the greater diversity of sand-dwelling animals in rivers connecting ancient bodies of water with waveswept shores, such as those of Lake Baikal, Black Sea, and Caspian Sea, and stated that there are no ecological equivalents in glaciated North America. Barton used mollusks and malacostracans as examples of relict fauna not found in glaciated North America, but SCDRS may be an exception because both groups are well represented.

Variability in type of gear and sieve size, plus the great seasonal variability in numbers of small individuals or instars, makes the value of numerical comparisons of abundance between investigations dubious. This becomes immediately obvious when one realizes that our densities were at least 10 times higher than those reported by Thornley (1985) for SCDRS. Some of the differences may reflect an increase in macrozoobenthos numbers and diversity over time as a result of pollution abatement measures that occurred in the 1960's and 1970's. However, differences in the amount and distribution of sampling effort and in sampling and processing techniques all probably contributed to the difference--which points out clearly the need for standardization. Other gross differences in density between areas may reflect differences in productivity. Barton and Lock (1979) suggested an average density of benthic organisms of about 2,000/m² in the Athabasca River, as well as many other streams. Barton and Smith (1984) provided estimates of total invertebrates for a variety of rivers in the world that ranged from  $17/m^2$  in the Danube River (Bulgaria) to  $40,000/m^2$  in certain areas of the Athabasca River. Spring and fall densities we measured in SCDRS averaged 24,000/m<sup>2</sup>. Assuming a sampling efficiency of only about 50% (Barton and Smith 1984) due to the large mesh size of the sieves we used, the densities in SCDRS may have exceeded those in most rivers of the world.

However, one can usually make confident quantitative comparisons of biomass, which are affected less from presence or absence of large numbers of small individuals, and by comparing selected species such as  $\frac{\text{Hexagenia}}{\text{Hexagenia}}$ . Biomass estimates for large rivers (Barton and Smith 1984) ranged from 0.1 to 8.6  $g/m^2$  and our value of 1.33  $g/m^2$  for the SCDRS equals or exceeds values for six of the eight rivers listed. The mean biomass for SCDRS is higher than most

listed for rivers below impoundments (Walburg et al. 1983), and is nearly identical to that reported for the St. Lawrence River (1.4 g/m²) by Mills et al. (1981). Densities of Hexagenia in spring in SCDRS (235/m²) were higher than those reported by Hudson and Swanson (1972) for a Missouri River reservoir (140/m²), but somewhat lower than those reported by Hiltunen and Schloesser (1983) for the St. Marys River (361/m²). Densities of Hexagenia at transect VI in the St. Clair River in October 1984, which ranged from 3,600 to 6,730/m², are among the highest densities reported in the literature, and exceed the maximum density (50/m²) recorded by Thornley (1985) in the St. Clair River in 1968 and 1977.

Large within-year and between-year variations in abundance of macrozoobenthos can typically be traced to life cycle patterns. Most invertebrates complete several generations a year, causing population structure to shift in a matter of weeks from one dominated by large mature individuals to one of mainly small, immature specimens. Because density of most taxa in SCDRS is higher in fall, we might assume that age structure in fall is dominated by young individuals that are subject to overwinter mortality. In contrast, populations with maximum densities in spring may be cold-adapted forms that overwinter with little mortality or grow at low temperatures, and were recruited to our No. 30 mesh screen by May. Several genera of chironomids have this adaptation to low temperature. Of the 24 taxa we analyzed in detail, 19 had maximum densities during the same month in successive years, and differences in densities between years were usually less than 30%. Hydra, Oligochaeta, Manayunkia, Chironomidae, and Acarina were the only taxa with large, erratic seasonal and yearly changes in density. Hiltunen (1980) noted large fluxes between years in the oligochaete population in the St. Clair River. These large changes in density were probably due to the life history of oligochaetes, to differences in behavior of the multiple species in this large group or both.

Of the abundant taxa, 75% were most numerous at the shallower off-channel stations. The relative difference in densities between off-channel and channel stations is probably a true reflection of the life history requirements of each taxon, whereas the absolute difference between stations is probably a sampling artifact. Channel stations in particular are characterized by higher current velocity and coarser sediments. The Ponar dredge is inefficient in fast currents, and in the hard clay or rubble substrate, that is characteristic of the channel bank stations. Many taxa (e.g. Gastropoda, Diptera, Trichoptera, and Ephemeroptera) may be abundant in these inadequately sampled areas with fast currents and hard substrate.

Sediment particle size and contaminant distribution basically determine the composition and density of the benthic community in SCDRS. The St. Clair River, with its wider range of sediment size and diversity of macrophytes is dominated by aquatic insects, amphipods, and snails that are intolerant of pollution. Our samples were collected mainly along the U.S. shoreline, which is less contaminated than Canadian nearshore waters (Kauss and Hamdy 1985). The diversity of macrozoobenthos in the Detroit River near Belle Isle is similar to that in the St. Clair River. The headwater areas of both rivers support large populations of the filter-feeding caddisflies <u>Cheumatopsyche</u> and

Hydropsyche. Densities of these two genera are higher in the Detroit River than in the St. Clair River, probably because seston levels are higher in Lake St. Clair than in Lake Huron (Kauss and Hamdy 1985). Concentrations of contaminants were moderately high in the lower Detroit River (Transect XVIII) but were low at stations along Grosse Ile (Limnotech, Inc. 1985). The bottom fauna near transect XVIII was dominated by oligochaetes, and the fine sediments were contaminated with oil. The variety of invertebrates was greater but the densities were lower in the gravel-cobble substrate of transects XIX-XXI than at transects in the upper Detroit River. The densities of most of the more primitive invertebrates, such as Oligochaeta, Nematoda, Nemertinea, and Manayunkia, were highest in the Detroit River. The transects in Lake St. Clair were devoid of macrophytes but the substrate was covered with Cladophora in October. The lake community was simple, consisting of Hexagenia, Occetis, Sphaeriidae, Ostracoda, and Nematoda, and was typical of any healthy, lentic community living on a bottom composed of fine sediments.

Sand, a dominant substrate in many large rivers, is unsuitable habitat for many benthic invertebrates (Barton and Lock 1979; Berner 1951). In the St. Clair, Detroit, and Athabasca rivers, dominant sediments range from sand in the Athabasca River to mud in the Detroit River (Table 49). The constant flow, low turbidity, and luxuriant plant growth in SCDRS must be major factors in stabilizing and incorporating finer sediments into what would probably be a typical river and sand habitat. Although current velocities are relatively high in SCDRS, most of the littoral substrates contain relatively high percentages of silt and clay that support large populations of insects and crustaceans. This situation may be analogous to that in the Volga and Angara rivers in Russia, which also support high biomasses of amphipods and oligochaetes (Barton and Smith 1984). The Athabasca River, in contrast, is turbid; the substrate is shifting sand that cortains little silt or clay; and the biomass of macroinvertebrates is relatively low (Barton 1980).

In summary, the high abundance and diversity of macrozoobenthos in SCDRS is due to the quality and diversity of the habitat: (1) high-quality water enters SCDRS from Lake Huron, (2) a wide variety of stable sediments are available, ranging from cohesive clay to cobble, (3) current velocities vary widely, ranging from 0 to 6 ft/s, and (4) submersed and emergent macrophytes are diverse and abundant.

#### DISTRIBUTION AND ABUNDANCE OF SUBMERSED MACROPHYTES

The submersed macrophyte community in the St. Clair and Detroit rivers changed little from 1983 to 1984. Frequency of occurrence of individual taxa between years varied by  $\leq$  7% in each river and was usually < 10% at each location. The few large discrepancies could be attributed to taxonomic or sampling problems. For example, at Point Hennepin, the occurrence of narrow-leaf Potamogeton spp. in June was 22% lower in 1984 than in 1983, but that of P. zosteriformis was 39% higher. Inasmuch as these two taxa superficially resemble each other early in the season, those collected in 1984 may have been Potamogeton spp. and those collected in 1983 may have been P. zosteriformis.

Table 49. Sediment composition (% of total) in three large rivers in North America.

| Sediment   |                                   | River     |         |  |  |  |
|------------|-----------------------------------|-----------|---------|--|--|--|
|            | Athabasca<br>(Alberta,<br>Canada) | St. Clair | Detroit |  |  |  |
| Mud        | 8                                 | 17        | 56      |  |  |  |
| Muddy sand | 28                                | 49        | 23      |  |  |  |
| Sand       | 48                                | 4         | 2       |  |  |  |
| Gravel     | 16                                | 30        | 18      |  |  |  |

The abundance of P. richardsonii in the June collections at Point Hennepin was 24% higher in 1984 than in 1983. The increase was due in part to the fact that a large bed of P. richardsonii in deep water was discovered and sampled routinely only after it broke the surface in July-August 1983.

The macrophyte community in SCDRS has remained stable since at least 1978. Schloesser and Manny (1982) collected one more taxon (19) in 1978 than we did and recorded the same dominant taxa by area (Chara spp. in the St. Clair River and Vallisneria americana in the Detroit River). In our study, maximum coverage averaged 53% over the six locations and varied less than 12% between years. Schloesser and Manny (1982) found submersed macrophytes at 68% of their stations, none of which were located in the shipping channel. Because a portion of our sampling grid extended into the shipping channel, where few plants lived, our estimates of percent cover on the shoals would have to be adjusted upward to be comparable with theirs. If that adjustment was made, our results would be similar to theirs.

The percent occurrence of taxa at our island locations also varied from that given by Schloesser and Manny (1982), who sampled most extensively in littoral waters adjacent to the Canadian and U.S. mainland (Table 50). The occurrences of V. americana, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis were lower at our St. Clair River island locations than reported by Schloesser and Manny (1982) at their mainland stations. Potamogeton gramineus and particularly Potamogeton spp. were more abundant at our locations than at their adjacent mainland locations. In the Detroit River, Potamogeton spp., <u>V. americana, P. richardsonii</u>, and Characeae were more common at our sampling locations, whereas Heteranthera dubia was more common at their mainland locations. Some of these differences may reflect design and sampling differences, but it appears that at least Potamogeton spp. are more common in shoal areas at the head and side of islands in SCDRS than along the U.S. and Canadian mainland shorelines. The factor most affecting the distribution of aquatic macrophytes is bottom type, which is largely determined by current velocity (Westlake 1975). Current velocities at the heads of islands in SCDRS are higher than those along the mainland shore; this difference may affect soil textures and the ability of various species to anchor in a given sediment (Ozimek et al. 1976).

Extensive monospecific stands of submersed macrophytes were largely lacking at the six sampling locations in SCDRS. Large stands of <u>Chara spp.</u> at Fawn Island and <u>Vallisneria americana</u> at Point Hennepin were the exceptions. The average number of taxa per grab was 2.5 over all locations and was highest (3.3) at Belle Isle. Crowder et al. (1977) found a mean value of 5.5 taxa in Lake Opinicon, Ontario, but their sampling area (25-cm-square quadrant) was somewhat larger than ours; Liston and McNabb (1986) collected about 2 taxa per Ponar grab in the St. Marys River.

Schloesser and Manny (1982) found that the areal distribution of macrophytes was more limited in the Detroit River than in the St. Clair River, but wrote that the proportion of plant beds with high, medium, and low densities was

Table 50. Percent frequency of occurrence of dominant submersed macrophytes collected in littoral mainland areas (Schloesser and Manny 1982) and on island shoals (present study) in the St. Clair and Detroit rivers.

|                          | St. Clai | r River          | Detroit River |                  |  |
|--------------------------|----------|------------------|---------------|------------------|--|
| Taxon                    | Mainland | Island<br>shoals | Mainland      | Island<br>shoals |  |
| Vallisneria americana    | 28       | 4                | 49            | 70               |  |
| Characeae                | 68       | <b>74</b> .      | 9             | 23               |  |
| Potamogeton richardsonii | 49       | 32               | 4             | 21               |  |
| Myriophyllum spicatum    | 28       | 8                | 13            | 20               |  |
| Elodea candensis         | 36       | 25               | 7             | 7                |  |
| Heteranthera dubia       | 1        | 1                | 31            | 7                |  |
| Potamogeton spp.         | 24       | 54               | 3             | 30               |  |
| Najas flexilis           | 1        | 5                | 5             | 5                |  |
| Potamogeton gramineus    | 11       | 24               | 3             | 5                |  |

similar in the two rivers. We found similar bed coverage between rivers and a 12% lower biomass in the Detroit River. Schloesser and Manny (1982) reported that maximum seasonal biomass over the entire system ranged from 118 to 427 g/m². Our September biomass estimates ranged from 93 to 265 g/m² over the six locations, and the highest seasonal biomass was 382 g/m², in block 6 at Stony Island.

Maximum biomass estimates for SCDRS made by Schloesser and Manny (1982) and by us were at the lower end of a range of  $110\text{--}520~g/m^2$  reported by Westlake (1963) for aquatic macrophyte stands in rivers at temperate latitudes. The mean biomass of  $176~g/m^2$  in SCDRS in September is similar to maximum values of  $150~g/m^2$  measured in the shallow littoral area of the St. Lawrence River (Cooley 1978) and  $170~g/m^2$  in the Red Cedar River, Michigan (Ball and Bahr 1975). In the Red Cedar River, several years of low discharge were followed by several years of record high flows that scoured and eliminated most of the macrophytes. Scouring due to extended high flows does not occur in SCDRS, and once macrophyte beds become established, it seems likely that only dredging or filling activities would physically remove them. The spring ice jam of 1984 did not scour beds, however the soft frazzle ice which typified this jam may not be an effective scouring agent.

Maximum summer biomass of submersed macrophytes in SCDRS is probably not related to nutrient availability. Nitrogen (200-400  $\mu g/L$ ) and phosphorus (2-30  $\mu g/L$ ) in the system were near the concentrations (100-200  $\mu g/L$  and 20-30  $\mu g/L$ , respectively) that Westlake (1975) believed to be sufficient to support optimum growth; the exception may be in the St. Clair River, where mean phosphorus levels were reported to be only 12  $\mu g/L$  (Ontario Ministry of the Environment 1979).

The seasonal growth patterns we found agreed largely with those reported by Schloesser et al. (1985). We found a higher biomass in September at every location, although biomass values for September were not significantly different from those for July-August at Belle Isle and Point Hennepin. Of the four locations we sampled in common, we were in agreement at Russell Island (October maximum), Belle Isle (August-September maximum), and Grosse Ile (August maximum). At Stag Island Schloesser et al. (1985) found Potamogeton spp. peaked in July and P. richardsonii in August; we found proportional increases in both taxa from June to September. Brown (1983) also recorded maximum biomass in Anchor Bay between August and November. The growing season for aquatic angiosperms is restricted to periods when water temperatures exceed 50°F (Haag 1979, Kunii 1981). The ice jam in the St. Clair River, in spring 1984 delayed the rise of water temperatures to 50°F by about 10 days but this delay did not affect the date on which maximum seasonal biomass was reached.

In the Detroit River, turbidity may reduce light penetration and prevent the development of certain species of submersed macrophytes in the deeper portions of the littoral area. It is a general view that aquatic macrophytes extend to depths receiving only 1-4% of surface light (Sculthorpe 1967), although a limit of 15% was observed by Bodkin et al. (1980). Chambers and Kalff (1985) found that angiosperms were limited to depths where an average of

at least 21% of the photosynthetically active radiation incident on the water surface was received over the growing season. The average light transmission to the bottom of the littoral area in the Detroit River (16%) is near the lower limit for plant growth; consequently any increase in turbidity in the Detroit River during the early growing season may eliminate some of the more light-sensitive species such as  $\underline{P}$ .  $\underline{crispus}$  and  $\underline{P}$ .  $\underline{pectinatus}$  (Sheldon and Boylen 1977).

The reduction of current velocity by vegetation in a lotic system is well documented (Gregg and Rose 1982; Nowell and Jumars 1984), and such a reduction clearly may allow small fish to live in areas where current velocity would otherwise exclude them. In addition, vegetation harbors benthic invertebrate food organisms and provides cover for juvenile fishes (Werner et al. 1983).

Macrophytes affect invertebrate community structure and abundance both directly and indirectly. Submersed macrophytes, by modifying the current, influence sediment deposition and thus influence the composition of invertebrate species on the bottom. Macrophytes create heterogeneity and can increase habitable surface area over a square meter of bottom by a factor of 2 (Brown et al. 1986). The most important function served by submersed macrophytes may be provided in fall, when the plants die and the plant material is released in a "pulse" in a form that can be rapidly used by aquatic detritivores (Hill and Webster 1983). In the New River, Virginia, this pulse accounted for 13.1% of the total annual organic input (including periphyton and allochthonous inputs) to the river and for 28% of the input generated within the middle reach of the stream (Hill and Webster 1983). The organic input provided by submersed plants is probably much greater in the SCDRS than in rivers such as the New River because little other organic matter that enters the SCDRS is derived from the watershed with the exception of storm sewers in the city of Detroit.

The taxonomic composition and abundance of aquatic macrophytes in SCDRS probably reflect the stability of flow more than any other environmental variable. The lack of spates provides long-term stability to the system. The pattern of distribution in the system reflects physiological and morphological adaptations of the macrophytes to light and current and results in communities that are fairly predictable. These developing beds then modify the current and light, thus allowing additional species to exploit this new microhabitat. Because competition and space are limited, this development is less predictable and prevents recognition of consistent associations between species. Differences in seasonal growth of different taxa further complicate the system, but they are predictable and further increase stability.

## DISTRIBUTION AND ABUNDANCE OF FISH

Most species of fish in the vicinity of island shoals in the St. Clair and Detroit rivers where our collections were made are either rare, transient species, or prefer other areas of the river. Our small hoop nets collected mostly yellow perch and rock bass, along with 34 other species. Larger trap nets (77 m long lead, 1.8 m deep heart) set by the Michigan Department of

Natural Resources (Haas et al. 1986) at the outer fringes of the shoal areas also collected mainly adult yellow perch and rock bass, along with 46 other species. Cosentino (1983) found 14 species commonly in a marsh-bay complex in the St. Clair River near Russell Island; however, only 6 of these were collected in our study. Island shoals, because of their openness and vulnerability to environmental extremes, may typically have fish communities dominated by only a few species.

It is also possible that the community of fish inhabiting the island shoals was not adequately sampled by our gear. This inadequacy would account for both variation in species caught and the large variation in our spatial and temporal catch rates. Hoop nets were chosen as our gear because of the difficulty of sampling in areas of high current. Although hoop nets tend to yield a lower catch per unit of effort and a more variable catch than other gears (Pennington et al. 1980), and are not equally efficient for all species (Kallemeyn and Novotny 1977), they may be one of the few gears that can be fished quantitatively in flowing water. And though electroshocking is not recommended for sampling in deep, turbid, high-gradient streams (Larimore and Garrels 1985), two-boat electroshocking might prove to be effective in the riverine portions of SCDRS. More effort and the use of other sampling gear. would have increased the size and diversity of our catch, but probably would not have contradicted our finding that yellow perch and rock bass are the permanent, dominant residents of the littoral fish community of these island shoals. Larger species that may belong to this community, but that may not have been adequately captured by our gear are smallmouth bass in the St. Clair River and channel catfish and stonecat in the Detroit River. We cannot speculate on the composition of fish shorter than 100 mm in littoral communities because of the relatively large mesh size (1-inch stretched measure) of the netting from which the body of our hoop nets were constructed.

A major objective of this study was to determine if fish used plant beds. We believe that the higher catches observed in plant beds than in non-vegetated areas may reflect species-specific (yellow perch, hornyhead chub, spottail shiner) tendencies, which may also depend on location (e.g. at Fawn Island fish abundance and the presence of plants were significantly related). These tendencies were more strongly expressed in 1983 than 1984, and were correlated with season. The occurrence of significant trends could have been masked by various factors. Early in the season it was difficult to find well-defined, high-profile plant beds extending substantial distances into the water column; consequently we usually selected low profile <a href="#">Chara</a> spp. beds as the vegetated areas in which we set our nets. Later in the season, high high-profile vegetation was so lush in some areas that it was difficult to find non-vegetated areas. Both situations could result in catches that might not support the well-documented preference of fish for structured environments of the sort provided by high profile vegetation (Brouha and von Geldern 1979; Prince and Maughan 1979; Helfman 1979; Paxton and Stevenson 1979). The poorly defined relationship between fish catch and vegetation in 1984 could be due to the rate of development of vegetation in spring 1984, which was generally lower and also varied more widely from location to location in 1984 than in 1983.

Overall, after considering the above variability, we believe that vegetation was related to abundance of three of the four common species inhabiting the island shoals. Submersed vegetation was also the only underwater structure in SCDRS, because the low gradient and navigation-related maintenance eliminate structure such as boulders and snags common to other riverine systems. Thus the submersed macrophyte beds are of considerable importance to fish production in SCDRS.

### CHARACTERIZATION OF SCDRS HABITATS

Because of the number and variety of the data, a site-by-site treatment of major taxa might facilitate impact analysis on a habitat basis. Table 51 shows a geographic breakdown of the dominant taxa of macrozoobenthos, submersed macrophytes, and fish found in SCDRS. The benthic transect numbers I-XXI are used as locators. With the following exceptions, sampling locations for fish and macrophytes were also sampling locations (transects) for macrozoobenthos: Transect XVIII at Point Hennepin, at the tip of Grosse Ile, was the macrozoobenthos sampling location closest to the Mamajuda Island Shoals plant and fish sampling locations: and transect XXI was several thousand feet upstream from the fish and macrophyte location at Stony Island. Vegetation at each of the transects was usually at the shallower, off-channel station, except at Stag Island, where the benthic samples were taken at the head of the island in an area devoid of plants.

Physical differences in the rivers can serve as a basis for this characterization. The St. Clair River can be divided into four types of shallow-water habitat (< 12 ft deep), each with a slightly different faunal composition: the entrance into the St. Clair River, the mainland shore in the upper river, the shoreline along the delta islands, and the island shoals. Transect I typifies the headwaters of the St. Clair River. In this area current velocities are fairly high, the substrate is composed of sand, and macrophytes are lacking. The fauna was composed of chironomids having special adaptations (thin, streamlined bodies) for living in sand; planktonic copepods and cladocerans; and the ubiquitous oligochaetes (Table 51). Biomass and density are low.

Transect II represents the only mainland littoral area sampled in the upper St. Clair River. This narrow band between the shoreline and the 12-ft depth contour has a mean width of about 170 ft, runs along both mainland shorelines, and covers 1157 acres or 14% of the total area of the upper St. Clair River. Sediments along this narrow band range from sand-silt in protected areas and sand, gravel, or cohesive clays in plant beds along the shipping channel. The texture of superficial sediments at any given site depends on bed material and current velocity, which in turn is determined by river width and channel configuration. The fauna at transect II is characterized by the high standing stocks of net-spinning caddisflies (Table 51), which presumably eat the seston coming from Lake Huron. Farther downstream the seston begins to settle out and the net-spinners are replaced by collector-gatherers such as amphipods and mayflies. Macrozoobenthos biomass along this band is high, probably due to extensive beds of macrophytes dominated by Chara spp., Potamogeton spp., Vallisneria americana, and P. richardsonii. Schloesser and Manny (1982, 1984)

Table 51. Commant macrozoobenthos, submersed macrophytes, and fishes in the SCORS in 1983-1984. Order of presentation of taxa in table indicates numerical or biomass rank. Transect number, substrate and current velocity values are associated with the macrozoobenthos data. Density (no./m²) and biomass values (g ash-free dry weight/m² for macrozoobenthos; g dry weight/m² for macrozoobenthos are for all taxa combined.

15

|                             | Dominant substrate |        | Surface current<br>velocity (ft/s |     |   |              |         | Macrophytes                                       |               |   |
|-----------------------------|--------------------|--------|-----------------------------------|-----|---|--------------|---------|---|---------------|---|
| Treasect                    | Off-channel        |        | Off-channel                       |     | Taxa  | Density      | Biomass | Macrophytes*/                                     | Biomass       | Fishes                                      |
| ı                           | Sa                 | 54     | 1,7                               | 1.8 | Chironomids, cladocerans, copepods, oligochaetes  | 1,700        | 0.14    | none  |               |   |
| 11                          | Se 51              | Gr .   | 0.7                               | 2.3 | Hydra, oligochaetes,<br>chironomids, snails,<br>caddisflies                             | 56,000       | 1.72    | Potamogeton spp<br>P. richardsonii<br>Vellismeria | ·             |   |
| [[[<br>(Stag<br>[sland)     | er                 | Gr     | 1.8                               | 2.1 | Hydra, chironomids, oligochaetes, caddisflies, snails                                   |              | 0.17    | Chara<br>Potamogeton spp<br>P. richardsonii       |               | Yellow perch<br>Hornyhead chub<br>Rock bass |
| IV<br>(Foun<br>Island)      | Sa Sf              | Sa     | 1.1                               | 2.5 | Hydra, oligochaetes,<br>snalls, chironomids,<br>amphipods, clams                        | 24,900       | 1.28    | Chara P. gramineus P. richardsonii                | 13 <b>0</b> . | Yellow perch<br>Rock bess<br>Hornyhead chub |
| V<br>(Mussell<br>(sland)    | Sa 51              | Gr     | 1,4                               | 2.8 | Hydra, oligochaetes,<br>Chironomids, snails,<br>amphipods, mayflies                     | 50,900       | 1.90    | Chera<br>F. gramineus<br>Fotamogeton spr          | 164<br>).     | Yellow perch<br>Rock bass<br>Hornyhead chub |
| AI                          | Sa Si              | Sa Si  | 0.5                               | 1.2 | Hydra, chironomids,<br>oligochaetes, amphipods,<br>mayflies, theils                     | 40,990       | 2.30    | Chara*<br>F. richardsoni                          | ļ.            |   |
| A11,                        | Sa Si              | C1     | 0.6                               | 1.9 | Hydra, oligochaetes,<br>Chironomids, snails,<br>amphipods, mayfiles                     | 60,800       | 3.06    | Chare*<br>P. richardsoni                          | Ĺ             |   |
| ATTI                        | S1 C1              | Sa SI  | 0.2                               | 0.7 | Oligochaetes, <u>Hydra</u> ,<br>chironomids, <u>Haneyunkia</u> ,<br>mayflies, amphipods | 66,500       | 1.24    | Chara*<br>Fotamogetom sp                          | <b>.</b>      |   |
| tx                          | Sa Si              | Sa 51  | 0.3                               | 0.4 | Oligochaetes, chironomids<br>Manayunkia, amphipods ,<br>Hydra, snails                   | , 15,900     | 0.62    | Chara*  |               |   |
| x                           | Sa                 | Sa 51  | 0.4                               | 0.4 | Oligochaetes, chironomids<br>Hydra, snells, amphipods,<br>mayfiles                      | , 11,600     | 0,48    | Chere*  |               |   |
| xt                          | \$1 C1             | \$1 C1 | 0.5                               | 0.2 | Oligochastes, nematodes,<br>Menayunkia, mayfiles,<br>Claus, Chironomids                 | 14,700       | 1.38    | none  |               |   |
| XII                         | Si Cl              | S1 C1  | 0.2                               | 0.2 | Oligocheetes, mayflies, chironomids, <u>Manayunkia</u> , nematodes, amphipods           | 7,800        | 1.46    | nane  |               |   |
| xiii                        | \$1 67             | SI CI  | 0.6                               | 0.5 | Oligochaetes, mayflies,<br>chironomids, nemetodes,<br>clams, <u>Manayunkia</u>          | 6,300        | 1.38    | none  |               |   |
| XIV                         | Sa Gr              | Sa S1  | 0.8                               | 1.2 | Oligochaetes, <u>Manayunkia</u> , clams, chironomids, snail caddisflies                 | 4,600<br>\$, | 1.15    | <u>Vallismeria</u> *                              |               |   |
| XV                          | Sa C1              | Sa C1  | 0.7                               | 1,6 | Caddisfiles, <u>Hydra</u> , aligochaetes, snails, clams, chironomids                    | 9,500        | 1,18    | Chara*  |               |   |
| XVI<br>(Belle<br>Isle)      | <b>S1</b>          | Sa Si  | 0.1                               | 0.9 | Oligochaetes, chironomids<br>nematodes, <u>Mydra</u> ,<br>amphipods, ostracods          | , 19,100     | 4,52    | P. richardsoni<br>Vallismeria<br>Mitellopsis      | <u>i</u> 106  | Rock bass<br>Yellow perch                   |
| MII                         | Si                 | Sa Si  | 0.3                               | 1.4 | Manayunkia, oligochaetes,<br>nematodes, copepeds,<br>Mydra, chironomids                 | 19,400       | 1.00    | Vallismeria*<br>Chere                             |               |   |
| XVIII<br>{Point<br>Hennepin | <b>51</b>          | \$1    | 0.4                               | 0.9 | Oligochaetes, smails,<br>nematodes, nemertines,<br>rhabdocoels, triclads                | 80,900       | 1.36    | Vallismeria<br>P. richardsoni<br>Potamogeton sp   |               | Yellow perch<br>Rock bass<br>Spottail shim  |
| xix                         | SI CI              | Gr Sa  | 0.4                               | 1.3 | Oligochaetes, Manayunkia,<br>nemertines, nematodes,<br>snails, rhabdocoels              | 14,800       | 0 0.66  | Vallismeria*                                      |               |   |
| XX                          | Co Gr              | Sa C1  | 0.7                               | 1.9 | Oligocheetes, name todes,<br>nemertines, snails,<br>Hydra, chironomids                  | 10,100       | 0.34    | Heteranthera*<br>Vallismeria<br>Potamogetom s     | ю.            |   |
| XXI<br>(Stony<br>(sland)    | Sa \$1             | Gr C1  | 0.8                               | 1.1 | Oligochaetes, Manayunkia,<br>nematodes, Hydra,<br>nemertines, Clams                     | 12,90        | 0 0.62  | Vallismeria<br>Myriophyllum<br>Heteranthera       | 163           | Rock bess<br>Channel catfi<br>Stonecat      |

Af C1 \* clay, S1 \* silt, Sa \* sand, Gr \* gravel, Co \* cobble; \* Based on visual estimates of plants present in samples of macrozonhenthos.

estimated that the standing crop of submersed macrophytes along the mainland shorelines is  $60\text{--}160~\text{g/m}^2$ .

Transects III, IV, and V are associated with island shoals. Between the shoreline and the 12-ft depth contour, these three island shoals, plus the St. Clair Middle Ground and a small shoal just above Fawn Island, cover 429 acres and represent 5% of the total surface area of the upper St. Clair River. Our sampling over most of this area indicated that the percent coverage by submersed macrophytes in this shallow water was about 60-70%. However, the shoals at the head of Stag Island are devoid of plants, current velocities are high, the substrate is gravel, and benthos standing crop is low. Plant coverage over the rest of Stag Island is also low (20%), and where plants are present standing crop is also low (< 100 g/m<sup>2</sup>). Although current velocities are high at the head of Fawn and Russell islands, plants such as P. gramineus, P. richardsonii, and Potamogeton spp. ring the outer edge of the shoals, and these species along with Chara spp. cover almost 70% of the rest of the shoals. Macrozoobenthos and plant biomass are high at both Fawn and Russell islands (Table 51). Dominant taxa of macrozoobenthos, aquatic plants, and fish are similar between sites. Seston concentrations are capable of sustaining relatively high levels of caddisflies in gravel substrates at Stag Island, but not at Russell Island.

Transects VI - X are along the shoreline of the South Channel and St. Clair Cutoff Channel in the St. Clair River delta area. A band of shallow water extends an average of 374 ft from the shoreline to the 12-ft depth contour along both the U.S. and Canadian sides of the river. This area covers 905 acres and represents 50% of the total surface area of this portion of the river. Currents were low (< 1.0 ft/s) and sediments were dominated by mixtures of silt and sand. Some of the highest biomass values for macrozoobenthos were found at transects VI and VII (Table 51), but biomass and densities declined dramatically along transects nearer to Lake St. Clair. Dominant invertebrate groups were similar between transects, with only minor shifts in order of abundance. High densities of Manayunkia appeared at transect VIII, and oligochaetes replaced Hydra as the dominant taxon on this transect. Chara spp. was the dominant plant on all transects (> 80% of samples) but P. richardsonii was also common at transects VI and VII.

The benthic fauna at all areas sampled in the St. Clair River, except transect I in Lake Huron, was usually dominated by Hydra, oligochaetes, chironomids, gastropods, amphipods, and mayflies. Densities of Hydra were usually highest in October at most transects; however, densities were high in May at transects VI - VIII and X in 1983 but not in 1984. The depth distribution of Hydra is also variable, densities usually being highest in deeper, near-channel areas; in other areas (e.g., transect V) its density peaked in shallow water. The presence of solid substrates such as vegetation or coarse gravel may modify the distribution, regardless of depth. Sand, gravel, and cohesive clay are usually present where current velocities exceed 2 ft/s, and sand and silt where velocities are less than 1 ft/s. Oligochaetes were most common in shallow water in May, and chironomids were common in shallow water in May and

October. Gastropods were most common in October; Amnicola dominated in shallow water and Elimia in deeper water. Densities of amphipods were high in shallow water and Gammarus was the dominant genus. Mayflies do not become abundant until transect IV, perhaps reflecting pollution effects from Sarnia at the head of the river. Hexagenia and Caenis were the most common genera and were densest in the fall; Hexagenia was the more abundant in deepwater and Caenis in shallow water. Ephemerella was also common, but distributed evenly over all depths. The Trichoptera were dominated by Cheumatopsyche and Hydropsyche; densities were high only in the upper St. Clair River. Neither genus showed trends in abundance related to water depth. Yellow perch, rock bass, and hornyhead chubs were the dominant fishes except seasonally when rainbow smelt occasionally were the most abundant.

Transects XI - XIII were located in Lake St. Clair in the deepest part of the lake (> 12 ft). Sediments were uniformly fine in the silt-clay class. Aquatic macrophytes were lacking, although sparse stands of <u>Cladophora</u> were evident in October. Benthic invertebrates were not abundant, but biomass was about equal to the system-wide average because the number of large <u>Hexagenia</u> nymphs was high (Table 51). The dominant genus of clams was <u>Pisidium</u>, and the dominant amphipod was <u>Gammarus</u>. Although substrate and current velocities appeared to be uniform among the transects, there were considerable differences in relative abundance of taxa other than oligochaetes.

Transects XIV - XV were in the headwaters of the Detroit River. These two transects differed in substrate, aquatic macrophyte composition, and macrozoobenthos composition (Table 51). Manayunkia was abundant at transect XIV but not abundant at transect XV, and Hydra and caddisflies were more abundant at transect XV. Current velocities were similar, but bed material was different at the two locations. Subtle differences in substrate and the presence or absence of Chara spp. and Vallisneria americana apparently influence the composition of benthic invertebrates more strongly than do current velocities. Macrozoobenthos densities were low but biomass values were near average for the system. Plant biomass values were low, in the 20-90 g/m² range (Schloesser and Manny 1982).

About 18% of the 5,160 total surface acres of the upper Detroit River overlie water less than 12 ft deep. These littoral areas include 272 acres around Belle Isle; 159 acres in the Scott Middle Ground; 472 acres along both shores, where the average width of the littoral band is 150 ft; and about 40 acres at the head of Fighting Island. Composition and density of fauna at transects XVI and XVII are probably only representative of shoals in the vicinity of Belle Isle. Our estimate of the biomass of aquatic macrophytes at Belle Isle (106 g/m²) fell within the range measured by Schloesser and Manny (1982) in this area in 1978; however, they found almost no plants along the narrow band of shallow water along the U. S. mainland shore and only a few plants in areas (Ambassador Bridge and above Fighting Island) along the Canadian shoreline below Belle Isle. At transect XVI, the densities of macrozoobenthos were lower than the average of 25,500/m² for the system, but the biomass was the highest recorded in SCDRS in 1983-84. This high biomass was due in part to the large mussel population in the Belle Isle area. Transect XVII was the only transect

where <u>Manayunkia</u> was numerically dominant. Benthic copepods and ostracods also were among the six most abundant taxa at the two Belle Isle transects. The rock bass was the dominant fish species.

Transects XVIII - XXI in the lower Detroit River cover a variety of habitats ranging from protected areas with fine, oil-contaminanted sediments (XVIII) to areas with high current velocities and bedrock substrate (XX). Of the 28,800-acre area of the lower Detroit River, about 82% is less than 12 ft deep. Because of the complexity of the system this area was not divided into mainland, island, or shoal areas. Plant biomass ranged from sparse at Point Hennepin  $(73 \text{ g/m}^2)$  to dense at Stony Island  $(163 \text{ g/m}^2)$ . Schloesser and Manny (1982)reported a similar range of values, including high biomass (150-220 g/m²) on the west side of Grosse Isle, around Celeron Island and the east side of Fighting Island, and generally lower values (60-160 g/m²) in most other areas of the river except along the U. S. mainland shoreline (where plants were lacking). Vallisneria americana and Heteranthera dubia were the dominant taxa in their collections and in ours. Biomass of macrozoobenthos was low, and dominated by oligochaetes--especially at transect XVIII. Snails, clams, and chironomids were the only other taxa to develop relatively high populations in the area. A variety of substrates were present but no pollution-sensitive insect group developed sizable populations. However, there were small populations of mayflies and caddisflies in areas with high current velocity and rock substrate. Rock bass dominated the fish community at Belle Isle and Point Hennepin, but the spottail shiner and two species of ictalurids were dominant in the lower Detroit River.

Oligochaetes, chironomids and Hydra dominated the upper Detroit River and oligochaetes, nematodes and nemertines dominated the lower Detroit River. Oligochaetes and nematodes were more common in shallow water in May, in contrast to nemertines and Manayunkia, which were more abundant in October in deeper water. Hydra was common only in May in 1983. Elimia, Amnicola, and Ferrisia were the most common gastropod taxa. Pisidium was the dominant pelecypod and Hydropsyche and Cheumatopsyche were the dominant caddisfly taxa. Both Gammarus and Hyalella were common amphipod taxa. Copepods were represented by benthic harpacticoids rather than planktonic taxa.

# Spring 1984 Ice Jam

The ice jam that stalled vessels and required ice breaking activity for 3 weeks in late April and early May 1984 provided us with a chance to evaluate a potentially worst-case condition similar to one that might develop under extended season navigation. Macrozoobenthos populations appeared to be the most adversely affected of the three groups studied. Densities of 10 taxa and total biomass were lower in 1984 than in 1983 and most declines occurred in the St. Clair River. However, most of the affected taxa had recovered by fall 1984 to levels equally or exceeding those in fall 1983, and taxa that did not recover completely reached densities that were within 30% of the fall 1983 values. It is not known whether these declines were due to ice scour, lower temperature, or some other factor or combination of factors. Maximum densities of the affected taxa were at the inshore station, and most of the taxa could be categorized as living near

the mud-water interface. Thus the decline could logically be attributed to ice scour in the shallow areas. It would be difficult to ascertain whether lower temperatures were involved, because organisms of each of the taxa have different physiological responses and age structures. Whatever the cause, most taxa that exhibited a seeming decline recovered to 1983 densities within 6 months.

The distribution and occurrence of aquatic macrophyte taxa changed little between years. Maximum percent coverage of macrophyte beds varied little between years and rivers. Development of beds in June was delayed in 1984 in the St. Clair River and at Belle Isle, but by September the beds were little different in 1984 than in 1983, at least through the upper two-thirds of SCDRS. There were significant differences in biomass between years, but there were no consistent differences between locations or months. Impacts on submersed macrophytes, other than possibly delayed development due to lower temperature, could not be ascribed to the ice jam.

Fish catches were usually lower in 1984, but this trend occurred in both rivers and in most comparisons was not statistically significant. Lower catches in 1984 may have been due to the effect of lower temperatures on development of plant beds, general activity level, and seasonal migrations.

#### CONCLUSIONS AND RECOMMENDATIONS

This study was conducted to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fishes in SCDRS. We believe that we have addressed this objective for the open water season on SCDRS within the constraints imposed by our data, and that our study provides a baseline data set that can be used to evaluate any future extension of the navigation season. We do not believe that the results of our study can be used alone to answer the question of whether increased winter vessel traffic will have a measurable effect on SCDRS. Such an evaluation would require minimally the development of one or more realistic scenarios in which the potential effects of vessel passage in the extended season on ice, water, and sediment movement in the SCDRS was adquately characterized, so that the impact of these physical changes on biota could be examined over the range of expected conditions. The ice jam of April 1984 may have had an undefined effect, but we cannot show that the ice jam was caused or exacerbated by navigation, or that the jam simulated conditions that might occur from vessel operation in January or February.

The benthic, aquatic plant, and fish communities described here appear to exist at the observed level of traffic without obvious ill effects from winter ship traffic. However, winter vessel traffic has occurred in SCDRS for many years and thus there is no truly unaffected baseline from which the effects of winter navigation that may have already occurred can be empirically judged. It has been postulated that increased shipping might amplify ice scour, turbulence, flooding, and dewatering, which in turn could affect the density, location, and behavior of biota in the system. It has also been postulated that the environmental

impacts of increasing winter shipping may be cumulative and take several years to become readily observable. We believe that an evaluation of the potential impacts of winter navigation on SCDRS would be facilitated by the development of an energy flow model plus an age-structured fishery model. The Corps-funded research on SCDRS has provided a substantial data base from which models of these kinds might be developed. Additional data are needed on phytoplankton, periphyton, and zooplankton standing crop and production, plus terrestrial inputs to complete the energy budget. This information would permit quantification of the simultaneous effects of all components according to their interrelationships in the ecosystem, and would avoid the problem associated with a piecemeal evaluation of individual components. Such models would be useful in partitioning impacts so that rational remedial strategies and mitigation could be attempted.

#### LITERATURE CITED

- Ball, R. C., and T. G. Bahr. 1975. Intensive Survey: Red Cedar River, Michigan. Pages 431-460 in B. A. Whitton, editor. River Ecology. University of California Press, Los Angeles.
- Barton, D. R. 1980. Benthic macroinvertebrate communities of the Athabasca River near Ft. MacKay, Alberta. Hydrobiologia 74:151-160.
- Barton, D. R., and H. B. N. Hynes. 1978. Wave-zone macrobenthos of the exposed Canadian shores of the St. Lawrence Great Lakes. J. Great Lakes Res. 4(1):27-45.
- Barton, D. R., and M. A. Lock. 1979. Numerical abundance and biomass of bacteria, algae and macrobenthos of a large northern river, the Athabasca. Int. Rev. gesampten Hydrobiol. 64:345-359.
- Barton, D. R., and S. M. Smith. 1984. Insects of extremely small and extremely large aquatic habitats. Pages 456-483 in V. H. Resh and D. M. Rosenberg, editors. The Ecology of Aquatic Insects. Praeger Publishers, New York.
- Berner, L. M. 1951. Limnology of the lower Missouri River. Ecology 32:1-12.
- Bodkin, P. C., V. Poluszny, and H. M. Dale. 1980. Light and pressure in two freshwater lakes and their influence on the growth, morphology and depth limits of <u>Hippuris vulgaris</u>. Freshwater Biol. 10:545-552.
- Brown, C. L. 1983. Productivity of aquatic macrophytes and associated periphyton in Lake St. Clair: a data report. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. 41 pp.
- Brown, C. L., T. P. Poe, J. R. P. French III, and D. W. Schloesser. 1986.
  Relationship of phytomacrofauna to surface area in naturally occurring macrophyte stands. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 86-2, 32 pp.
- Brouha, P., and C. E. von Geldern, Jr. 1979. Habitat manipulation for centrarchid production in western reservoirs. Pages 11-17 in D. L. Johnson and R. A. Stein, editors. Response of Fish to Habitat Structure in Standing Water. North Central Division American Fisheries Society Special Publication 6.
- Chambers, P. A., and J. Kalff. 1985. Depth distribution and biomass of submersed aquatic macrophyte communities in relation to Secchi depth. Can. J. Fish. Aquat. Sci. 42:701-709.
- Cole, L. J. 1903. The delta of the St. Clair River. Geological Survey of Michigan. Vol. IX, Part 1, 25 pp.

ĺ

- Cooley, J. L. 1978. Environmental assessment of the FY 1979 winter navigation demonstration on the St. Lawrence River. Technical Report L. Environmental Assessment. FY 1979 Winter Navigation Demonstration on the St. Lawrence River. State University of New York. Institute of Environmental Program Affairs. Syracuse, NY. 17 pp.
- Cosentino, P. M. 1983. Fish community structure and the utilization of Harsens Island marsh-bay complex, Lake St. Clair. Fisheries Research Report No. 1913. Michigan Department of Natural Resources, Lansing, MI. 41 pp.
- Crowder, A. A., J. M. Bristow, M. R. King, and S. Vanderloet. 1977.
  Distribution, seasonality, and biomass of aquatic macrophytes in Lake
  Opinicon (Eastern Ontario). Nat. Can. 104:441-456.
- Derecki, J. A. 1984a. St. Clair River physical and hydraulic characteristics. Great Lakes Environmental Research Laboratory Open File Report. Great Lakes Environmental Research Laboratory, NOAA, Ann Arbor, MI. 10 pp.
- Derecki, J. A. 1984b. Lake St. Clair physical and hydraulic characteristics. Great Lakes Environmental Research Laboratory Open File Report. Great Lakes Environmental Research Laboratory, NOAA, Ann Arbor, MI. 8 pp.
- Derecki, J. A. 1984c. Detroit River physical and hydraulic characteristics. GLERL Open File Report. Great Lakes Environmental Research Laboratory, NOAA, Ann Arbor, MI. 11 pp.
- Gleason, G. R., D. J. Behmer, and K. L. Vincent. 1979. Evaluation of benthic dislocation due to ship-induced pressure waves. Lake Superior State College, Project Number 5100 of the Great Lakes Basin Commission, Ann Arbor, MI. 62 pp.
- Goodyear, C. D., T. A. Edsall, D. M. O. Dempsey, G. D. Moss, and P. E. Polanski. 1982. Atlas of spawning and nursery areas of Great Lakes fishes. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Report FWS/OBS-82/52, Vol. VI, VII, VIII.
- Gregg, W. W., and F. L. Rose. 1982. The effects of aquatic macrophytes on the stream microenvironment. Aquat. Bot. 14:309-324.
- Haag, R. W. 1979. The ecological significance of dormancy in some rooted aquatic plants. J. Ecol. 67:727-738.
- Haas, R. C., W. C. Bryant, K. D. Smith, and A. J. Nuhfer. 1986. Movement and harvest of fish in Lake St. Clair, St. Clair River and Detroit River. Final report on Winter Navigation Study, U. S. Army Corps of Engineers. Michigan Department of Natural Resources. Fisheries Division.

- Hamdy, Y., and L. Post. 1985. Distribution of mercury, trace organics, and other heavy metals in Detroit River sediments. J. Great Lakes Res. 11:353-365.
- Harlow, G. L. 1965. Report on pollution of the Detroit River, Michigan waters of Lake Erie, and their tributaries. Summary, conclusions, and recommendations. Pages 756-851 in Proceedings of the Conference in the matter of pollution of the navigable waters of the Detroit River and Lake Erie and their tributaries in the State of Michigan. Vol. 3. U. S. Department of Health, Education, and Welfare, Public Health Service, Washington, D.C.
- Hatcher, C. O., and R. T. Nester. 1983. Distribution and abundance of fish larvae in the St. Clair and Detroit rivers. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 83-5, 41 pp.
- Helfman, G. S. 1979. Fish attraction to floating objects in lakes. Pages 49-57 in D. L. Johnson and R. A. Stein, editors. Response of Fish to Habitat Structure in Standing Water. North Central Division American Fisheries Society Special Publication 6.
- Hill, B. H., and J. R. Webster. 1983. Aquatic macrophyte contribution to the New River organic matter budget. Pages 273-282 in T. D. Fontaine III and S. M. Bartell, editors. Dynamics of Lotic Ecosystems. Ann Arbor Science, Ann Arbor, MI.
- Hiltunen, J. K. 1979. Investigation of macrobenthos in the St. Marys River during an experiment to extend navigation through winter, 1974-75. U.S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Administrative Report.
- Hiltunen, J. K. 1980. Composition, distribution, and density of benthos in the lower St. Clair River, 1976-1977. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Administrative Report 80-4, 28 pp.
- Hiltunen, J. K., and B. A. Manny. 1982. Distribution and abundance of macrozoobenthos in the Detroit River and Lake St. Clair, 1977. U. S. Fish and Wildlife Service. Great Lakes Fishery Laboratory. Administrative Report 82-2, 87 pp.
- Hiltunen, J. K., and D. W. Schloesser. 1983. The occurrence of oil and the distribution of <u>Hexagenia</u> (Ephemeroptera:Ephemeridae) nymphs in the St. Marys River, Michigan and Ontario. Freshwater Invert. Biol. 2(4):199-203.
- Hotchkiss, N. 1967. Underwater and floating-leaved plants of the United States and Canada. U. S. Bur. Wildl. Serv. Resour. Publ. 44. 124 pp.

- Hotchkiss, N. 1970. Common marsh plants of the United States and Canada. U. S. Fish. Wildl. Serv. Resour. Publ. 93. 99 pp.
- Hudson, P. L., and S. J. Nichols. In Press. Benthic community of the Savannah River below a peaking hydropower station. J. Entomol. Sci.
- Hudson, P. L., and G. A. Swanson. 1972. Production and standing crop of Hexagenia (Ephemeroptera) in a large reservoir. Stud. Nat. Sci. (Portales, N. M.) 1 (4):1-36.
- Jones, J. J. 1982. Potential effects of winter shipping on diving ducks wintering in the Detroit River. Master of Science Thesis, University of Michigan, Ann Arbor, 91 pp.
- Kallemeyn, L. W., and J. F. Novotny. 1977. Fish and fish food organisms in various habitats of the Missouri River in South Dakota, Nebraska, and Iowa. U. S. Fish. Wildl. Serv., Biol. Serv. Prog., FWS/OBS-77/25. 100 pp.
- Kauss, P. B., and Y. S. Hamdy. 1985. Biological monitoring of organochlorine contaminants in the St. Clair and Detroit rivers using introduced clams, Elliptio complanatus. J. Great Lakes Res. 11:247-263.
- Kunii, H. 1981. Characteristics of the winter growth of detached <u>Elodea</u> <u>nuttallii</u> (Planch.) St. John in Japan. Aquat. Bot. 11:57-66.
- Larimore, R. W., and D. D. Garrels. 1985. Assessing habitats used by warm water stream fishes. Fisheries (Bethesda) 10(2):10-16.
- Limno-Tech, Inc. 1985. Summary of the existing status of the upper Great Lakes connecting channels data. Limno-Tech, Inc., Ann Arbor, MI. 157 pp.
- Liston, C. R., W. G. Duffy, D. E. Ashton, T. Batterson, and C. D. McNabb. 1981. Supplementary environmental baseline studies and evaluation of the St. Marys River during 1980. U. S. Fish. Wildl. Serv., Biol. Serv. Prog., FWS/OBS 80/62.1. 167 pp.
- Liston, C. R., W. G. Duffy, D. E. Ashton, C. D. McNabb, and F. E. Koehler. 1980. Environmental baseline and evaluation of the St. Marys River dredging. U. S. Fish. Wildl. Serv., Biol. Serv. Prog., FWS/OBS-80/62, 295 pp.
- Liston, C. R., and C. McNabb, (Principal investigators) with D. Brazo, J. Bohr, J. Craig, W. Duffy, G. Fleisher, G. Knoecklein, F. Koehler, R. Ligman, R. O'Neal, M. Siami, and P. Roettger. 1986. Environmental baseline studies of the St. Marys River during 1982 and 1983, prior to proposed extension of the navigation season. Draft Report submitted to the U. S. Fish and Wildlife Service under contract 14-16-0009-79-013 and the U. S. Army Corps of Engineers, Detroit District.

- McCauley, C. 1985. An annotated bibliography on the macrozoobenthos and aquatic macrophytes of the St. Clair River, Lake St. Clair and the Detroit River. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 85-2, 43 pp.
- Michigan Water Resources Commission. 1967. Water resources uses: present and prospective for St. Clair River, Detroit River, Lake Erie, Maumee River Basin and water quality standards and plan of implementation. Michigan Department of Conservation, Lansing, MI. 153 pp.
- Mills, E. L., S. B. Smith, and J. L. Forney. 1981. The St. Lawrence River in winter: population structure, biomass, and patterns of its primary and secondary food web components. Hydrobiologia 79:65-75.
- Mozola, A. J. 1969. Geology for land and ground-water development in Wayne County, Michigan. Michigan Geological Survey, Department of Natural Resources. Report of Investigation 3, 19 pp.
- Mudroch, A. 1985. Geochemistry of the Detroit River sediments. J. Great Lakes Res. 11:193-200.
- Muth, K. M., D. R. Wolfert, and M. T. Bur. Environmental Study of Fish Spawning and Nursery Areas in the St. Clair--Detroit River System. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 86-, 53 pp.
- Nowell, A. R. M., and P. A. Jumars. 1984. Flow environments of aquatic benthos. Annu. Rev. Ecol. Syst. 15:303-328.
- Ontario Ministry of the Environment. 1979. St. Clair River organics study, biological surveys 1963 and 1977. Ontario Ministry of the Environment, Water Resources Assessment Unit, London, Ontario, 90 pp.
- Ozimek, T., A. Prejs, and K. Prejs. 1976. Biomass and distribution of underground parts of <u>Potamogeton perfoliatus</u> L. and <u>P. lucens</u> L. in Mikolajskie Lake, Poland. Aquat. Bot. 2:309-316.
- Paxton, K., and F. Stevenson. 1979. Influence of artificial structure on angler harvest from Killdeer Reservoir, Ohio. Pages 70-76 in D. L. Johnson and R. A. Stein, editors. Response of fish to habitat structure in standing water. North Central Division American Fisheries Society Special Publication 6.
- Pennington, C. H., H. L. Schramm, Jr., M. E. Potter, and M. P. Farrell. 1980 Aquatic habitat studies on the Lower Mississippi River, river mile 480-530; Report 5; Fish studies--pilot report. U. S. Army Engineer Waterways Experiment Station. Environmental Laboratory. Miscellaneous Paper E-80-1.

(

- Poe, T. P. 1983. Food habits of larval yellow perch as a potential indicator of water and habitat quality. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, Michigan. Administrative Report 83-2, 21 pp.
- Poe, T. P., and T. A. Edsall. 1982. Effects of vessel-induced waves on the composition and amount of drift in an ice environment in the St. Marys River. U. S. Fish and Wildlife Service. Great Lakes Fishery Laboratory, Ann Arbor. MI. Administrative Report 82-6, 45 pp.
- Poe, T. P., T. A. Edsall, and J. K. Hiltunen. 1980. Effect of ship-induced waves in an ice environment on the St. Marys River ecosystem. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 80-6, 125 pp.
- Prince, E. D., and O. E. Maughan. 1979. Attraction of fishes to tire reefs in Smith Mountain Lake, Virginia. Pages 19-25 in D. L. Johnson and R. A. Stein, editors. Response of Fish to Habitat Structure in Standing Water. North Central Division American Fisheries Society Special Publication 6.
- Pugsley, C. W., P. D. N. Herbert, G. W. Wood, G. Brotea, and T. W. Obal. 1985. Distribution of contaminants in clams and sediment from the Huron-Erie corridor. I-PCBs and Octachlorostyrene. J. Great Lakes Res. 11:275-289.
- SAS Institute Inc. 1982. SAS User's Guide: Statistics 1982 Edition. SAS Institute, Cary, NC. 584 pg.
- Schloesser, D. W., T. A. Edsall, and B. A. Manny. 1985. Growth of submersed macrophytes communities in the St. Clair-Detroit river system between Lake Huron and Lake Erie. Can. J. Bot. 63:1061-1065.
- Schloesser, D. W., and B. A. Manny. 1982. Distribution and relative abundane of submersed aquatic macrophytes in the St. Clair-Detroit River ecosystem. U. S. Fish and Wildlife Service. Great Lakes Fishery Laboratory. Administrative Report 82-7, 49 pp.
- Schloesser, D. W., and B. A. Manny. 1984. Rapid qualitative methods for estimating the biomass of submersed macrophytes in large water bodies. J. Aquat. Plant Manage. 22:102-104.
- Sculthorpe, C. D. 1967. The biology of aquatic vascular plants. Edward Arnold Ltd., London. 610 pp.
- Sheldon, B. R., and C. W. Boylen. 1977. Maximum depth inhabited by aquatic vascular plants. Am. Midl. Nat. 97:248-254.
- Texas Instruments Incorporated, Ecological Services. 1975. Report of fish and macrozooplankton studies on the St. Clair River in the vicinity of the proposed Belle River Power Plant. Prepared for Detroit Edison. Texas Instruments Inc., Dallas, TX. v.p.

Thornley, S. 1985. Macrozoobenthos of the Detroit and St. Clair Rivers with comparisons to neighboring waters. J. Great Lakes Res. 11:290-296.

1

- Thornley, S., and Y. Hamdy. 1984. An assessment of the bottom fauna and sediments of the Detroit River. Ontario Ministry of the Environment, 48 pp.
- Trautman, M. B. 1981. The fishes of Ohio. Ohio State University Press, Columbus, OH. 782 pp.
- USACE (U. S. Army Corps of Engineers). 1980. Final Environmental Impact Statement, Belle River Power Plant, St. Clair County, Michigan. U. S. Army Corps of Engineers, Detroit District, v. p.
- USACE. 1984. Appendix to the St. Clair River ice jam report. Great Lakes Hydraulics and Hydrology Branch. U. S. Army Corps of Engineers, Detroit District. 40 pp.
- Voss, E. G. 1972. Michigan Flora Part I: Gymnosperms and monocots. Cranbrook Institute of Science. Bloomfield Hills, MI. 488 pp.
- Walburg, C. E., J. F. Novotny, K. E. Jacobs, and W. D. Swink. 1983. Effects of reservoir releases on water quality, macroinvertebrates, and fish in tailwaters: field study results. Technical Report E-83-6, prepared by National Reservoir Research Program, U. S. Fish and Wildlife Service, for the U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS. 109 pp.
- Werner, E. E., J. F. Gilliam, D. J. Hall, and G. G. Mittlebach. 1983. An experimental test of the effects of predation risk on habitat use in fishes. Ecology 64:1540-1548.
- Westlake, D. F. 1963. Comparisons of plant productivity. Biol. Rev. Camb. Philos. Soc. 38:385-425.
- Westlake, D. F. 1985. Macrophytes. Pages 106-128 in B. A. Whitton, editor. River Ecology. University of California Press, Los Angeles.

# APPENDIX A

Sampling Locations for Macrozoobenthos

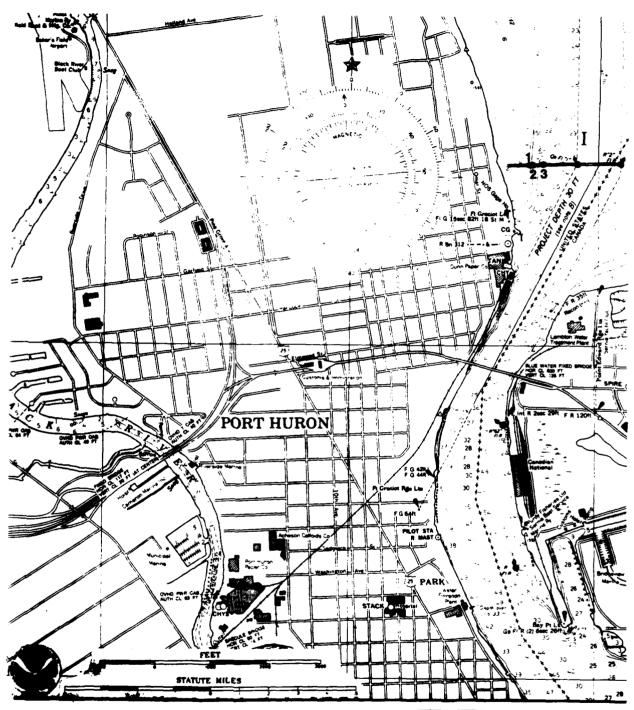
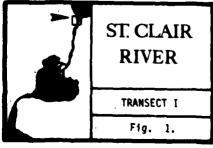


Fig. 1.

Transect I is in line with buoys number 1 and 2 at the head of the St. Clair River. Stations 1, 2, and 3 are in water 8, 12, and 16 feet deep, respectively, on the U.S. side of the shipping channel about 600-750 feet offshore.



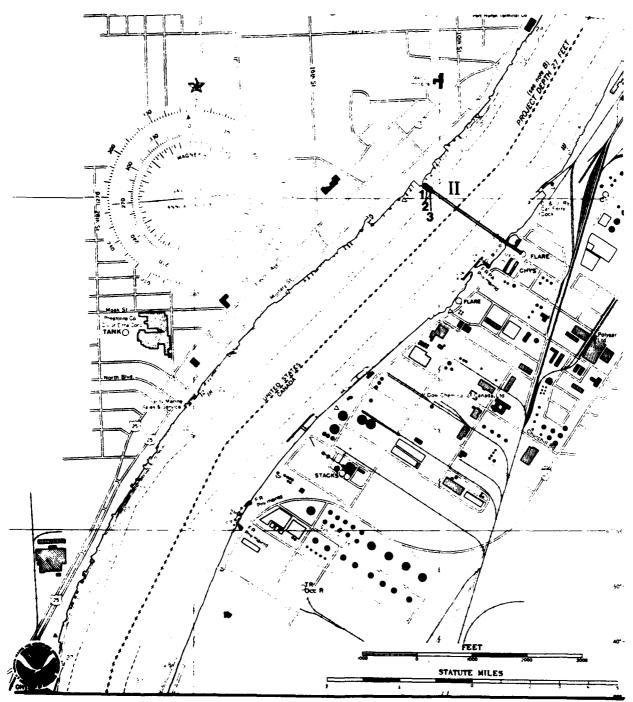


Fig. 2.

Transect II is in the St. Clair River about 4.5 miles downstream from transect I and is in line with a peninsular piece of land on U.S. side and a flare on the property of Dow Chemical of Canada, Ltd. Stations 1, 2, and 3 are in water 5, 10, and 16 feet deep, respectively, on the U.S. side of the shipping channel about 50-100 feet offshore.



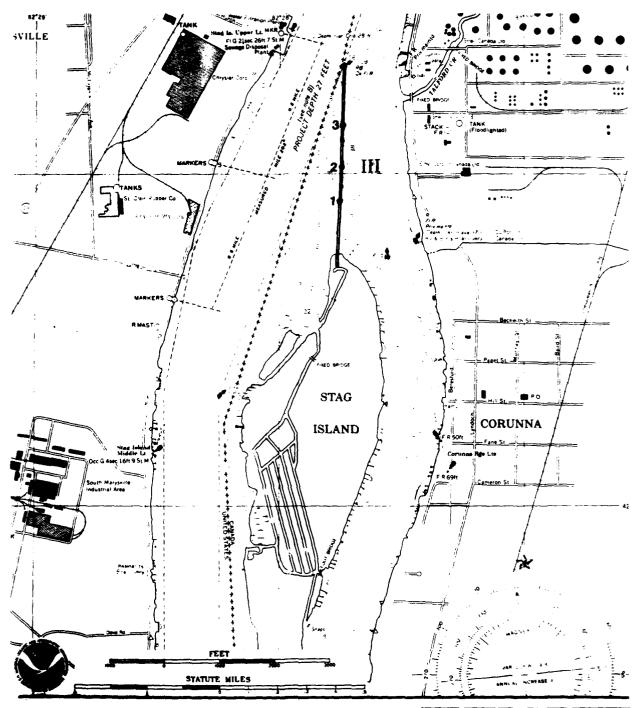
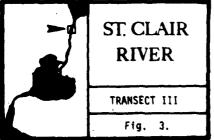


Fig. 3.

Transect III is at the head of Stag Island, about 4 miles downstream from transect II. The transect extends from the upstream tip of the island to buoy RB. Stations 1, 2, and 3 are in water 6, 13, and 18 feet deep, respectively, about 1000-2500 feet offshore.



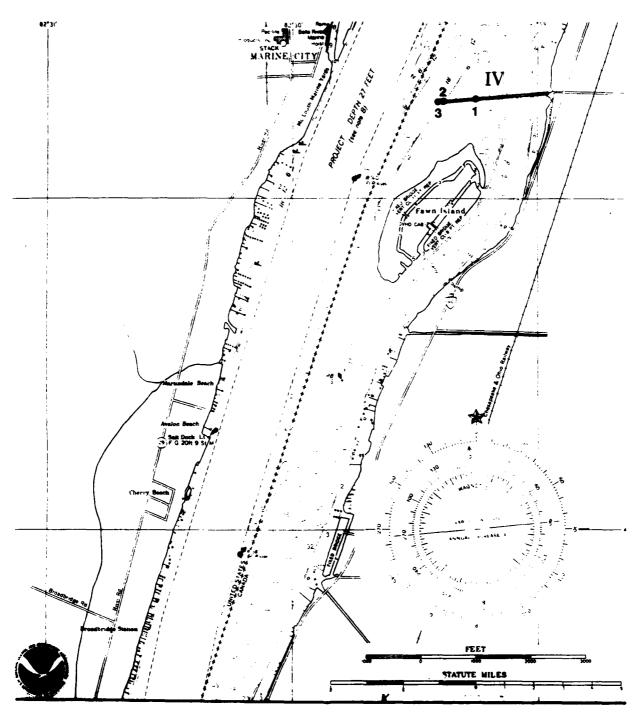
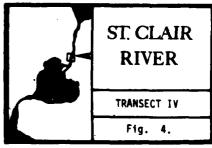


Fig. 4.

Transect IV is at the head of Fawn Island and is about 13 miles downstream from transect III. It extends due west from an unnamed east-west road on the Canadian shore. Stations 1, 2, and 3 are in water 4, 12, and 16 feet deep, respectively.



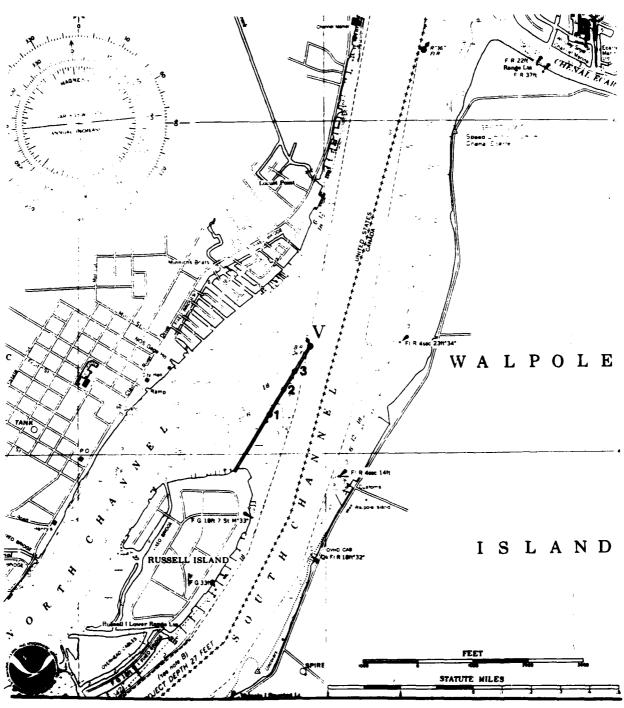
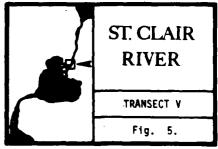


Fig. 5.

Transect V is at the head of Russell Island about 5.5 miles downstream from transect IV. It extends from the upstream tip of the island to buoy BR. Stations 1, 2, and 3 are in water 5, 10, and 16 feet deep, respectively, about 650-2100 feet offshore of Russell Island.



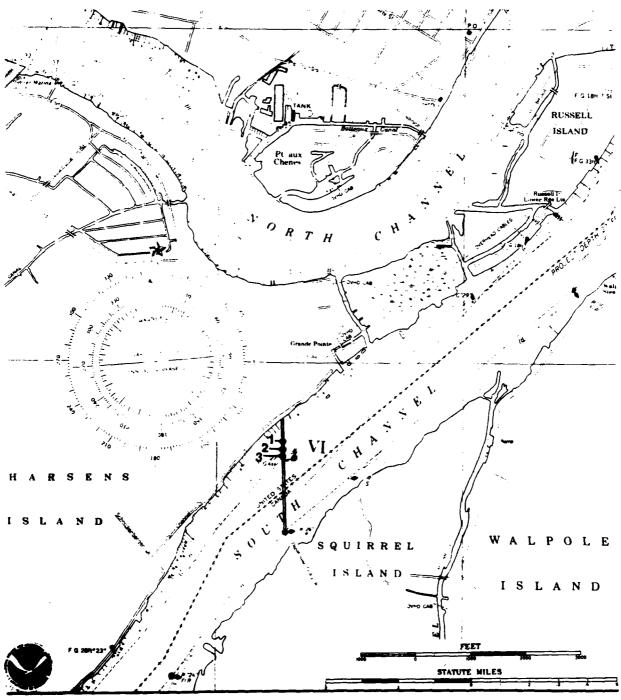


Fig. 6.

Transect VI is in the South Channel in line with buoys number 26 and 27 about 2.2 miles downstream from transect V. Stations 1, 2, and 3 are in water 4, 8, and 13 feet deep, respectively, about 400-750 feet offshore.



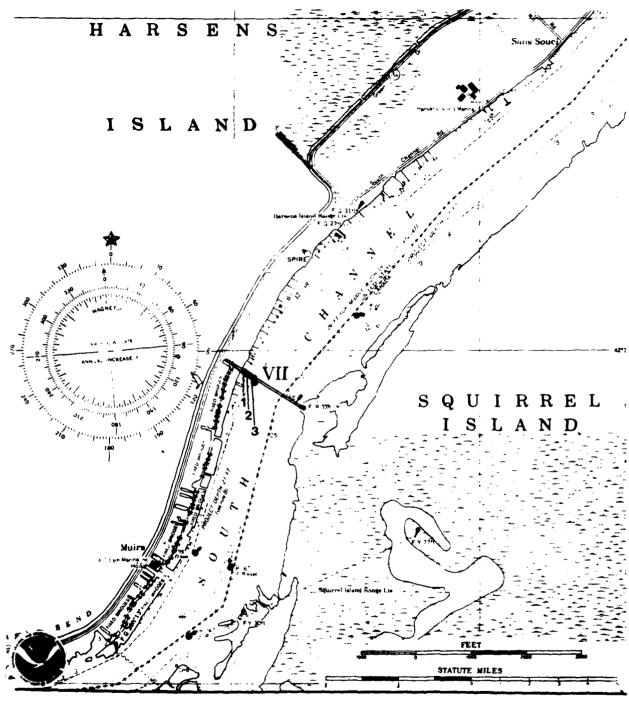
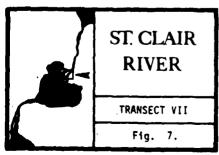


Fig. 7.

Transect VII is in the South Channel in line with buoys 17 and 20 about 2.9 miles downstream from transect VI. Stations 1, 2, and 3 are in water 6, 10, and 18 feet deep, respectively, about 100-250 feet offshore.



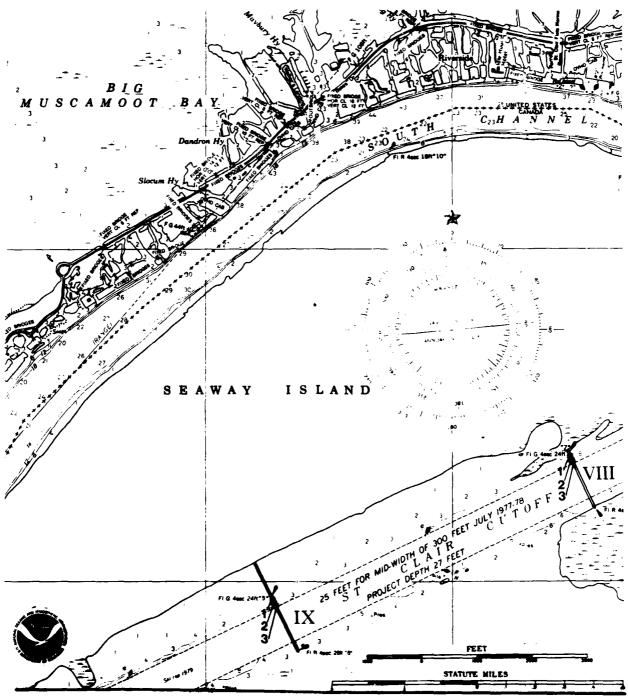
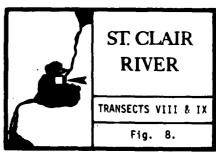


Fig. 8.

Transect VIII is in the St. Clair Cut-off Channel in line with Lights 7 and 8 about 3.2 miles Jownstream from transect VII. Stations 1, 2, and 3 are in water 4, 7, and 14 feet deep, respectively, about 100-250 feet offshore. Transect IX is in the St. Clair Cut-off Channel, in line with Lights 5 and 6. Stations 1, 2, and 3 are in water 5, 8, and 13 feet deep, respectively, about 700-800 feet offshore.



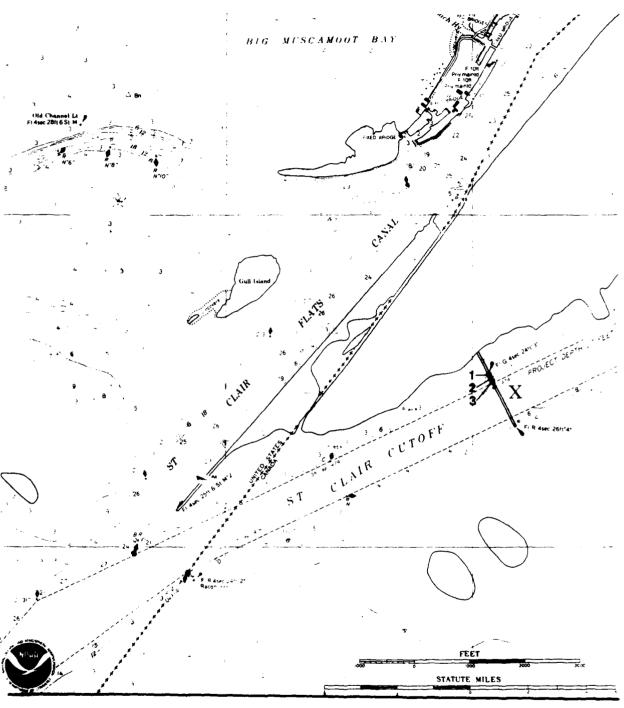


Fig. 9.

Transect X is in the St. Clair Cut-off Channel, in line with Lights 3 and 4. Stations 1, 2, and 3 are in water 5, 8, and 13 feet deep, respectively, about 700-800 feet offshore.

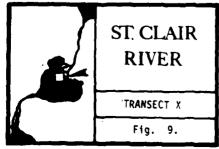
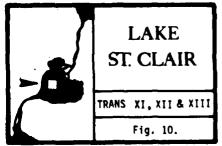




Fig. 10.

Transect XI is in Lake St. Clair in line with buoys 25 and 26 about 4.5 miles downstream from transect X. Stations 1, 2, and 3 are in water 19, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel. Transect XII is in Lake St. Clair, in line with buoy 24 and a stationary Light. Stations 1, 2, and 3 are in water 21, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel. Transect XIII is in Lake St. Clair, in line with buoys 21 and 22. Stations 1, 2, and 3 are in water 20, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel.



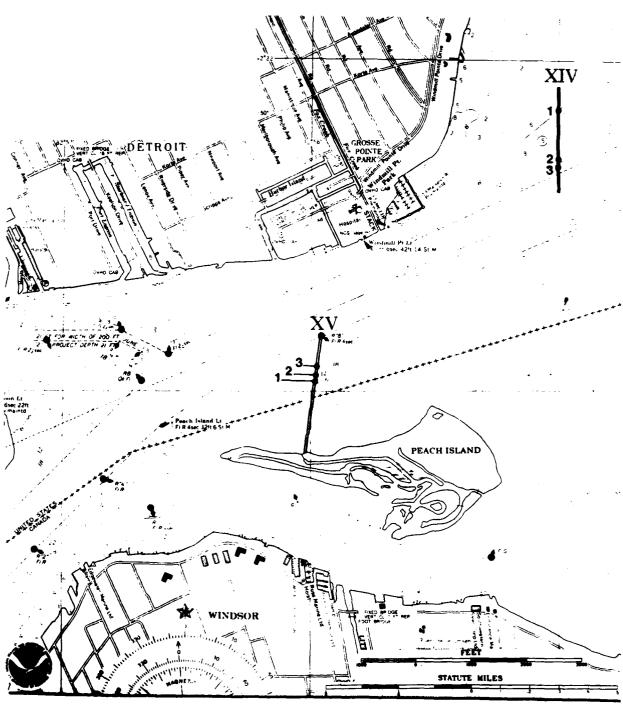
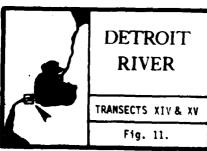


Fig. 11.

Transect XIV is in Lake St. Clair near the head of the Detroit River on a bearing of 4° from the Peach Island Range Tower. Stations 1, 2, and 3 are in water 7, 10, and 18 feet deep, respectively, on the north side of the channel, about 5000-6000 feet offshore. Transect XV is in the Detroit River on a bearing of 187° from buoy 8 on the north side of Peach Island. Stations 1, 2, and 3 are in water 7, 10, and 17 feet deep, respectively, about 1300-1600 feet offshore of Peach Island.



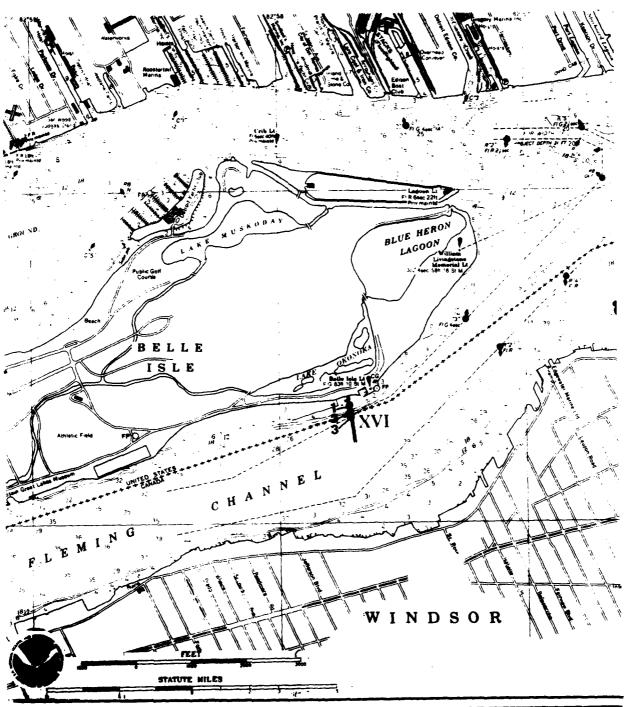


Fig. 12.

Transect XVI is on the south side of Belle Isle about 1.8 miles downstream from transect XV. The transect extends on a bearing of 172° from a point on the shoreline midway between the entrance to the Coast Guard Station vessel slip and the base of the Michigan Department of Natural Resources fishing pier. Stations 1, 2, and 3 are in water 6, 9, and 16 feet deep, respectively, and about 50-250 feet offshore.



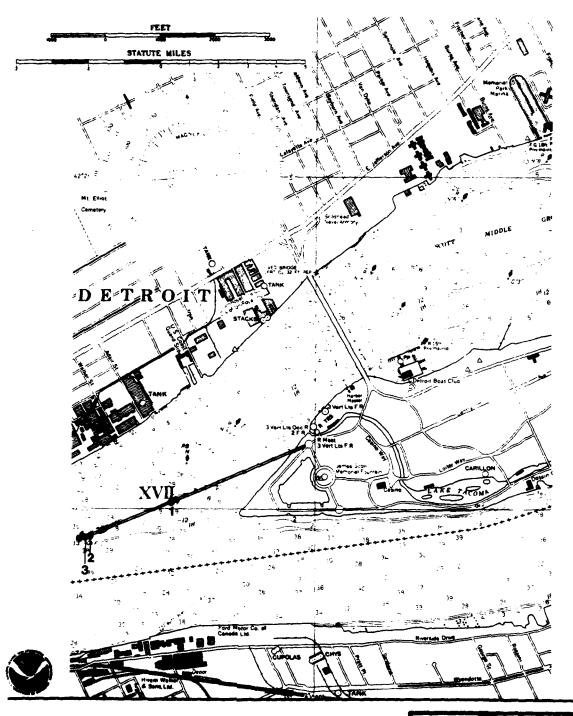


Fig. 13.

(

Transect XVII is below Belle Isle between buoy RB and a road intersection on Belle Isle about 2.5 miles downstream from transect XVI. Stations 1, 2, and 3 are in water 10, 12, and 18 feet deep, respectively, about 2600-3900 feet offshore.



DETROIT RIVER

TRANSECT XVII

Fig. 13.

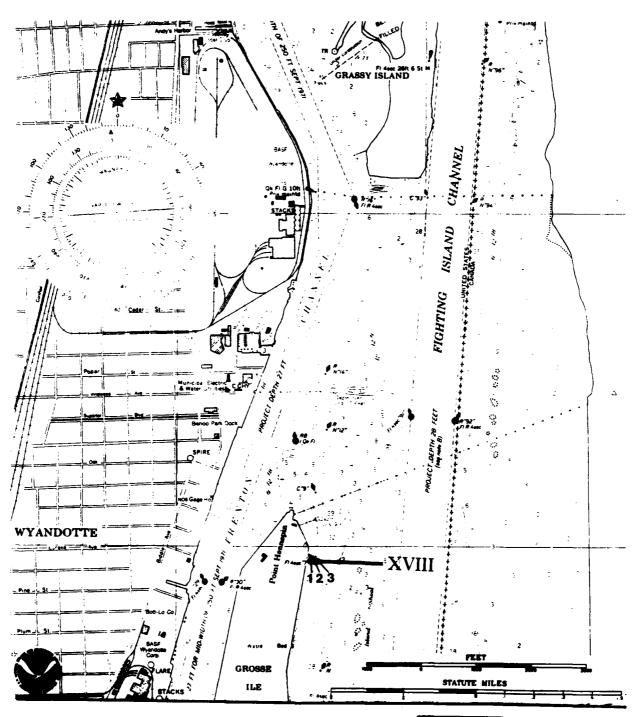
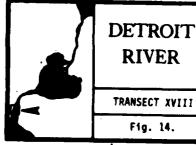


Fig. 14.

Transect XVIII is on the east side of the tip of Point Hennepin on a bearing of 275° from buoy 7 about 12.6 miles downstream from transect XVII. Stations 1, 2, and 3 are in water 6, 8, and 16 feet deep, respectively.



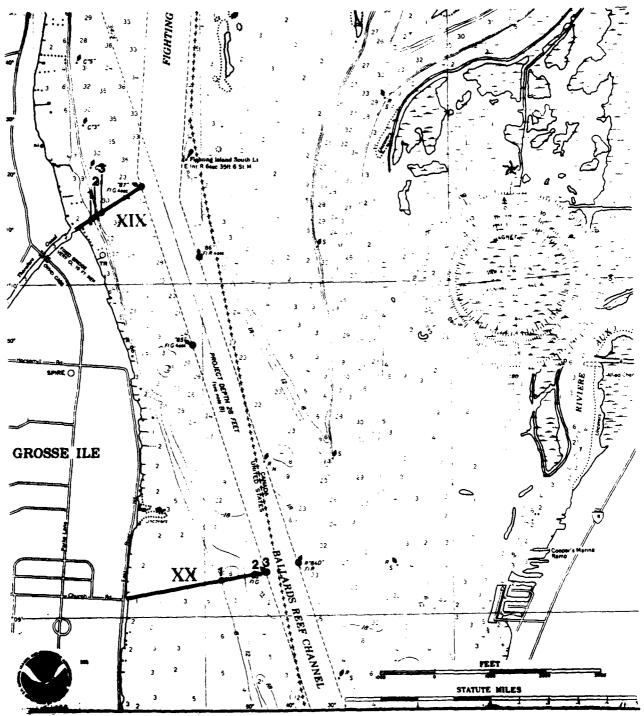


Fig. 15.

Transect XIX is adjacent to the Fighting Island Channel on a line between buoy 87 and the Thorofare Canal. Stations 1, 2, and 3 are in water 6, 12, and 20 feet deep, respectively, about 400-500 feet offshore. Transect XX is adjacent to the Ballards Reef Channel on a line between buoy 83 and Church Road on Grosse Isle. Stations 1, 2, and 3 are in water 5, 13, and 20 feet deep, respectively, about 1800-2600 feet offshore.



DETROIT RIVER

TRANSECTS XIX & XX

Fig. 15.

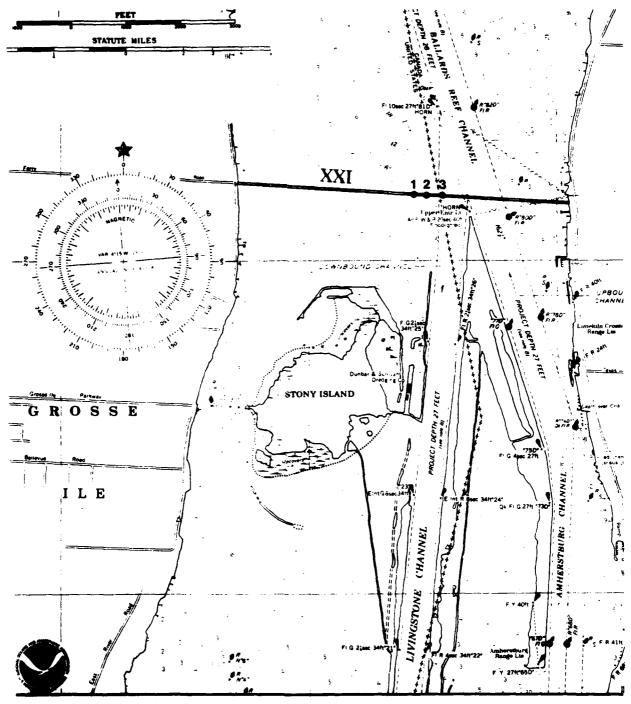


Fig. 16.

Transect XXI is adjacent to the Livingstone Channel on a bearing of 98° from Ferry Road on Grosse Isle. Stations 1, 2, and 3 are in water 9, 16, and 22 feet deep, respectively, about 3300-3700 feet offshore.



APPENDIX B

Macrozoobenthos Ponar Grab Data

| MACROZOOBENTHOS DONAR GRAB COUNT DATA |          |             |           | 5/ 3/83                    |
|---------------------------------------|----------|-------------|-----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 1  |          |             |           |                            |
| TAXON                                 | - GR     | GRAB COUNTS | JNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA                              | 0        | -           | 0         | 7                          |
| all chidara                           |          |             |           |                            |
| NEMATODA                              | 0        | ო           | 8         | 34                         |
| OLIGOCHAETA<br>Nais                   | 0        | 0           | -         |                            |
| OTHER<br>ALL OLIGOCHAETA              | 55<br>80 | 72          | <b>4</b>  | 1198                       |
| CLADOCERA<br>DAPHNIA                  | -        | ٥           | 0         | ۲                          |
| ALL CLADOCERA                         |          |             |           | 1                          |
| COPEPODA<br>CYCLOPOIDIDAE             | -        | 0           | 0         |                            |
| LIMNOCALANUS                          | 6        | ٥           | -         |                            |
| ALL COPEPODA                          |          |             |           | 34                         |
| OSTRACODA                             | 0        | -           | 0         | 7                          |
| AMPHIPODA<br>GAMMARUS                 | 0        | -           | ю         | ·                          |
| PONTOPOREIA HOYI                      | 35       | <b>©</b>    | 0         |                            |
| ALL AMPHIPODA                         |          |             |           | 393                        |
| TERRESTRIAL INSECT                    | -        | 0           | 0         | 7                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             | 5/ 3/83       |
|---------------------------------------|------|-------------|---------------|
| TRANSECT 1 STATION 1 (CONT'D)         | GRAB | GRAB COUNTS | ESTIMATED     |
| TAXON                                 | -    | 2 3         | NO./SQ. METER |
| DIPTERA<br>CHIRONOMIDAE 32 35 13 551  | 32   | 35 13       | 551           |
| PELECYPODA<br>Spiaeridae              |      | ,           |               |
| PISIDIUM                              | 9    | ∞ 4         |               |
| SPHAERIUM                             | 0    | 0           |               |
| ALL SPHAERIIDAE ALL PELECYPODA        |      |             | 207           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |             |           | 5/ 3/83                 |
|---------------------------------------|----------|-------------|-----------|-------------------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 2  |          |             |           |                         |
| TAXON                                 | GRA<br>+ | GRAB COUNTS | STNL<br>3 | ESTIMATED NO./SQ. METER |
| NEMATODA                              | 6        | 6           | 3.4       | 310                     |
| OLIGOCHAETA                           | 54       | 73          | 89        | 1343                    |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA     | 0        | 6           | 0         | 21                      |
|                                       |          |             |           | 21                      |
| CLADOCERA<br>DAPHNIA                  | 0        | -           | 0         |                         |
| DAPHNIA PULEX                         | 0        | ٥           | 6         |                         |
| ALL CLADOCERA                         |          |             |           | 21                      |
| COPEPUDA<br>DIAPTONIUS                | 8        | ч           | ø         |                         |
| HARPACTICOIDA                         | 0        | 0           | 8         | <b>v</b><br>2           |
| LIMNOCALANUS                          | 0        | 8           | -         |                         |
| ALL COPEPODA                          |          |             |           | 63                      |
| DSTRACODA                             | 0        | က           | 0         | 21                      |

48

GAMMARUS

----HYALELLA AZTECA
----PONTOPOREIA HOYI

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                          |     |              |           | 5/ 3/83                    |
|--|-----|--------------|-----------|----------------------------|
| TRANSECT 1 STATION 2 (CONT'D)                                  | 1   | !            | ļ         |                            |
| TAXON  |     | GRAB COUNTS  | STNU<br>3 | ESTIMATED<br>NO./SQ. METER |
| IAL INSECT   | ,   | -            | -         | 14                         |
| DIPTERA<br>CHIRONOMIDAE  | 153 | 87           | 139       | 2610                       |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA<br>ALL EPHEMEROPTERA | ٥   | *            | ٥         | •                          |
| TRICHOPTERA<br>LEPTOCERIDAE<br>MYSTACIDES                      | 0   | 0            | -         |                            |
| OECETIS<br><br>ALL TRICHOPTERA                                 | 0   | -            | 0         | <b>2</b>                   |
| GASTROPODA AMNICOLA  | 0 ( | <b>+</b> .   | - (       |                            |
| ALL GASTROPODA   | 0   | -            | ო         | 4                          |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                          | 4   | <del>2</del> |           |                            |
| SPHAERIUM  | •   | 0            | -         |                            |
| ALL SPHAERIDAE<br>ALL RELECYPODA                               |     |              |           | 186<br>186                 |
|  |     |              |           |                            |

| MACKUZUUBENIHUS PUNAK GRAB CUUNI DATA |   |             |     | 5/ 3/83       |
|---------------------------------------|---|-------------|-----|---------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 3  | æ | GRAB COUNTS | STA | ESTIMATED     |
| TAXON                                 | - | 7           | က   | NO./SQ. METER |
| ဗ္ဗ                                   | 7 | ٥           | ٥   | 4-            |
| ALL F1SH                              |   |             |     | 4             |
| CNIDARIA<br>H:DRA                     | 0 | 0           | -   | ۲             |
| ALL CNIDARIA                          |   |             |     | 7             |
| RHABDOCOELA                           | 0 | 0           | -   |               |
| NEMATODA                              | - | 31          | 8   | 234           |
| OLIGOCHAETA<br>Nais                   | 0 | 0           | 8   |               |
| OTHER<br>ALL OLIGOCHAETA              | 9 | 130         | 26  | 1405          |
| CLADOCERA DAPHAIA                     | 0 | 0           | -   | 7             |
| ALL CLADOCERA                         |   |             |     | 7             |
| COPEPODA<br>DIAPTOMUS                 | 4 | ĸ           | 8   |               |
| HARPACTICOIDA                         | 0 | -           | 0   |               |
| ALL COPEPODA                          |   |             |     | 83            |
| OSTRACODA                             | 0 | 0           | 8   | 4-            |

| GRAB COUNTS  1 2 3  1 2 3  ELA HOVI  FODA  DAE  OPODA  OPODA  AE  H  H  H  H  H  H  H  H  H  H  H  H  H  | MACROZOOBENTHOS PONAR GRAB COUNT DATA  |     |              |           | 5/ 3/83                |
|--|--|-----|--------------|-----------|------------------------|
| GRAB COUNTS  SETA HOVI  FPDDA  TO 3 15  TO 2 1  TO 2 1  TO 4  TO 60  TO 7  TO  |  |     |              |           |                        |
| IRUS  IRUS  IRUS  IRUS  IRUS  IRUS  IRUS  ICHOPTERA  IC |  | æ - | AB COL       | JNTS<br>3 | ESTIMATED NO./SQ. METE |
| PDDA  IPDDA  IPDDA  IDAE  IDAE | S                                      |     | 1<br>1<br>1  | 15        |                        |
| DAE   30 110 60 11   | PONTOPOREIA HOYI                       | 0   | ~            | -         |                        |
| DAE  DAE  DAE  DAE  DAE  DAE  DAE  DAE   | ALL AMPHIPODA                          |     |              |           | 145                    |
| DAE  DAE  DAE  DOPTERA  DPODA  AE  16 13 9  M  THE STIDAE  VPODA   | DIPTERA<br>CHIRONOMIDAE                | 30  | 10           | 9         | 1377                   |
| OPODA  OPODA  ERIIDAE  VPODA   | TRICHOPTERA<br>LEPTOCERIDAE<br>GECETIS | 0   | 0            | 8         |                        |
| 0 2 2 2 0  | ALL TRICHOPIERA                        |     |              |           | 4                      |
| DPODA  AE  16 13 9  M  ERIIDAE  YPODA  | ACARINA                                | 0   | 7            | 8         | 28                     |
| OPODA  OPODA  AE  16 13 9  M  ERITDAE  YPODA   | GASTROPODA<br>AMNICOLA                 | 8   | <del>1</del> | 4         |                        |
| OPODA  AE  16 13 9  M  ERIIDAE  YPODA  | LYMNAEA                                | 0   | -            | 0         |                        |
| AE 16 13 9 M 1 0 0 ERIDAE YPODA  | ALL GASTROPODA                         |     |              |           | 152                    |
| 16 13 99 14 16 19 19 19 19 19 19 19 19 19 19 19 19 19  | PELECYPODA<br>Sphaedithae              |     |              |           |                        |
| 1 0 0<br>AE  | WINIOUS HER                            | 5   | <del>t</del> | o         |                        |
| AE   | SPHAERIUM                              | -   | 0            | 0         |                        |
|  | ALL SPHAERIIDAE<br>ALL PELECYPODA      |     |              |           | 269<br>269             |

| MACKUZUUBENIHUS PUNAK GRAB CUUNI DAIA                   | 4            |             |            | 5/ 3/83                    |
|---|--------------|-------------|------------|----------------------------|
| ST. CLAIR RIVER TRANSECT 2 STA<br>TAXON                 | STATION 1 GR | GRAB COUNTS | UNTS<br>3  | ESTIMATED<br>NO./SQ. METER |
| 1   | 0            | . 0         | +          | 7                          |
| ALL FISH  |              |             |            | 7                          |
| CNIDARIA<br>Hydra                                       | 26           | 0           | 271        | 2114                       |
| ALL CNIDARIA  |              |             |            | 2114                       |
| RHABDOCOELA   | 56           | 4           | 36         | 606                        |
| NEMATODA  | 82           | 101         | 197        | 3058                       |
| MIRUDINEA<br>GLOSSIPHONIDAE<br>HELOBDELLA STAGNALIS<br> | 0            | -           | 0          |                            |
| OLIGOCHAETA<br>Nais                                     | 80           | 21          | 80         |                            |
| SPIROSPERMA   | 4            | 63          | 124        |                            |
| OTHER<br>ALL OLIGOCHAETA                                | 2400 1808    |             | 1192       | 39405                      |
|   | ES.          | 0           | 0          | 34                         |
| ALL POLYCHAETA  |              |             |            | 34                         |
| CLADOCERA<br>DAPHNIA                                    | 8            | 7           | -          |                            |
|   | 0            | 0           | -          |                            |
| ILYOCRYPTUS   | 0            | 0           | <b>K</b> O |                            |
| ALL CLADOCERA   |              |             |            | 76                         |

1

| MACROZOOBENTHOS PONAR GRAB COUNT DATA             |                  |             |           | 5/ 3/83  |
|---|------------------|-------------|-----------|--|
| TRANSECT 2 STATION 1 (CONT'D)                     | ,                | ;           |           |  |
| TAXON   | - 68             | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER                     |
| 200A  | ;<br>;<br>;<br>; | 1           | <br>      | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
|   | 0                | 0           | -         |  |
| _   | 0                | 0           | -         |  |
| CYCLODY VEDNALIA                                  | •                | •           | •         |  |
|   | >                | >           | -         |  |
| DIAPTOMUS   | •                | ~           | 19        |  |
|   |                  |             |           |  |
| HARPACTICOIDA                                     | <b>8</b>         | 9           | 262       |  |
| LIMNOCALANUS                                      | 0                | 0           | 8         |  |
| Q 3 I I 2 I 9 P P P P P P P P P P P P P P P P P P | ,                | ,           | 3         |  |
| MACROCYCLOPS                                      | 0                | 0           | -         |  |
| PARACYCLOPS                                       | c                | •           | ٢         |  |
|   | •                | >           | •         |  |
| ALL COPEPODA                                      |                  |             |           | 2927   |
| OSTRACODA   | 0                | 0           | 9         | 7  |
| AMPHIPODA   |                  |             |           |  |
| GAMMARUS  | =                | 4           | ø         |  |
| HVALET A AZTECA                                   | c                | c           | ;         |  |
|   | •                | 4           | 2         |  |
| PONTOPOREIA HOYI                                  | 0                | -           | 7         |  |
|   |                  |             |           |  |
| ALL AMPHIPODA                                     |                  |             |           | 586  |
| ISOPODA   |                  |             |           |  |
| ASELLUS   | 0                | 0           | -         | 7  |
| ALL. ISOPODA                                      |                  |             |           |  |
| TERRESTRIAL INSECT                                | 0                | 0           | -         | -  |
|   |                  |             |           |  |

| TRANSECT 2 STATION 1 (CONT'D) | æ           | GRAB COUNTS | STNU     | ESTIMATED     |
|-------------------------------|-------------|-------------|----------|---------------|
| TAXON                         | -           | 5           | 6        | NO./SQ. METER |
| DIPTERA                       | •           |             | •        |               |
| CERATOPOGONIDAE               | 9           | 9           | 7 !      |               |
| CHIRONOMIDAE                  | 9<br>0<br>0 | 4<br>5/     | 0.<br>0. | 31 60         |
| EMPIDIDAE                     | - (         | 0 (         | ₹ •      |               |
| PSYCHODIDAE<br>All diptera    | >           | >           | -        | 10571         |
|                               |             |             |          |               |
| EPHEMEROPIERA                 | 0           | 0           | 8        |               |
| CAENIDAE                      |             |             |          |               |
| CAENIS                        | 7           | -           | -        |               |
|                               |             |             |          |               |
| EPHEMERIDAE                   | •           |             | (        |               |
| HEXAGENIA                     | 7           | -           | 7        |               |
|                               |             |             |          |               |
| EPHEMERELLIDAE                | •           | •           | ٢        |               |
|                               | >           | -           | •        |               |
| RAFTISCIDAF                   |             |             |          |               |
| BAETISCA                      | 0           | -           | 0        |               |
| 1000                          |             |             |          |               |
| HEPTAGENI IDAE                |             |             |          |               |
| STENDNEMA                     | 0           | 0           | 8        |               |
|                               |             |             |          |               |
| ALL EPHEMEROPTERA             |             |             |          | 158           |
| COLEOPTERA                    |             |             |          |               |
| ELMIDAE                       |             |             |          | ,             |
| DUBIRAPHIA                    | 0           | 0           | 7        |               |
|                               |             |             |          |               |
| ALL COLEOPTERA                |             |             |          | <u>4</u>      |
| LEPIDOPTERA                   | 6           | 4           | 7        | 96            |
|                               |             |             |          |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |             |     |     | 5/ 3/83       |
|---|-------------|-----|-----|---------------|
| TRANSECT 2 STATION 1 (CONT'D)                   | GRAB COUNTS | COC | SIN | ESTIMATED     |
| TAXDN   | -           | 7   | 6   | NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | 0           | -   | 0   |               |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE                | 0           | 0   | ā.  |               |
| HYDROPSYCHE                                     | 0           | 0   | ø   |               |
| LEPTOCERIDAE<br>DECETIS                         | 0           | -   | 0   |               |
| SETODES   | 0           | -   | 0   |               |
| OTHER   | 0           | 0   | -   |               |
| POLYCENTROPODIDAE<br>NEURECLIPSIS               | 0           | -   | 9   |               |
| OTHER<br>ALL TRICHOPTERA                        | 0           | •   | -   | 227           |
| ACARINA   | -           | 0   | 23  | 165           |
| TARDIGRADA                                      | 0           | 0   | ю   | 21            |
| GASTROPODA<br>AMNICOLA                          | 20          | 11  | 89  |               |
| FERISSIA  | 0           | 0   | 4   |               |
| HYSA  | 4           | 6   | 8   |               |
|   | -           | 0   | 0   |               |
| ALL GASTROPODA                                  |             |     |     | 1549          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |             |     | 5/ 3/83                    |
|---------------------------------------|-----------|-------------|-----|----------------------------|
|                                       | GRAB<br>1 | GRAB COUNTS | 30  | ESTIMATED<br>NO./SQ. METER |
| PELECYPODA<br>Sphaeridae              |           |             |     |                            |
| PISIDIUM                              | e         | 4           | 55  |                            |
| SPHAERIUM                             | 0         | 0           | IO. |                            |
| ALL SPHAERIIDAE                       |           |             |     | 303                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |      | 5/ 3/83   | /83      |
|---------------------------------------|-----|-------------|------|-----------|----------|
| ST. CLAIR RIVER TRANSECT 2 STATION 2  | GRA | GRAB COUNTS | SINI | ESTIMATED | <u>.</u> |
| TAXON                                 | -   | 7           | 6    | NO./50.   | METER:   |
| CNIDARIA<br>Hydra                     | 26  | =           | 4    | 558       |          |
| ALL CNIDARIA                          |     |             |      | 558       |          |
| RHABDOCOELA                           | ø   | φ           | е    | 103       |          |
| NEMERTINEA                            | ō   | 0           | 4    | 96        |          |
| NEMATODA                              | 42  | 28          | 33   | 109       |          |
| OLIGOCHAETA<br>Nais                   | 80  | €           | Ξ    |           |          |
| SPIROSPERMA                           | 09  | 38          | 53   |           |          |
| OTHER<br>ALL OLIGOCHAETA              | 117 | 231         | 144  | 4958      |          |
| POLYCHAETA<br>Manayunkia speciosa     | 0   | 0           | ស    | <b>6</b>  |          |
| ALL POLYCHAETA                        |     |             |      | 34        |          |
| CLADOCERA<br>DAPHNIA                  | 8   | -           | -    |           |          |
| ILYOCRYPTUS                           | -   | 0           | 0    |           |          |
| ALL CLADOCERA                         |     |             |      | 34        |          |

| TRANSECT 2 STATION 2 (CONT'D) | ć   | 9           |              |  |
|-------------------------------|-----|-------------|--------------|--|
| TAXON                         | ¥ - | 8<br>2<br>2 | 2<br>2<br>3  |  |
| COPEPODA                      |     | ,           |              | 6<br>6<br>6<br>6<br>6<br>7<br>6<br>6<br>7<br>6<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8 |
| CYCLOPUIDIOAE                 | 0   | -           | 0            |  |
| DIAPTOMUS                     | n   | 7           | 4            |  |
|                               |     | •           | •            |  |
| HARPACTICOIDA                 | 25  | n           | <del>-</del> |  |
| LIMNDCALANUS                  | 0   | 0           | -            |  |
|                               |     | ,           |              |  |
| PARACYCLUPS                   | -   | -           | 0            |  |
| ALL COPEPODA                  |     |             |              | 372  |
| DECAPODA                      |     |             |              |  |
| ASTACIDAE                     | -   | 0           | 0            | 7  |
| ALL DECAPODA                  |     |             |              | 7  |
| OSTRACODA                     | •   | -           | 0            | 4  |
| AMPHIPODA                     |     |             |              |  |
| GAMMARUS                      | IO. | -           | -            |  |
| HYALELLA AZTEGA               | m   | g           | 7            |  |
|                               | •   | ŀ           | ı            |  |
| PONTOPOREIA HOYI              | 0   | -           | 0            |  |
| •                             |     |             |              | 131  |
| ISOPODA                       |     |             |              |  |
| ASELLUS                       | 0   | 0           | 8            | 4  |
| ALL ISOPODA                   |     |             |              | 7  |
| DIPTERA                       |     |             |              |  |
| CHIRONOMIDAE                  | 208 | 115         | 60 T         | 2879   |
| EMPIDIDAE<br>All Diptera      | -   | *           | C            | 3154   |

| TRANSECT 2 STATION 2 (CONT'D)  TRANSECT 2 STATION 2 (CONT'D)  TAXON  THEME ROPTERA  CARNIDAE  CARNICACOPTERA  ALL COLEOPTERA  CARNICACOPTERA  CARN | 2 STATION 2       |           |                  |     |                         |
|--|-------------------|-----------|------------------|-----|-------------------------|
| AE 3 10 4 3 2 3 10 4 4 3 2 3 10 4 4 3 2 3 10 4 4 3 2 3 10 4 4 3 10 10 10 10 10 10 10 10 10 10 10 10 10   |                   | 6         |                  |     |                         |
| AE  BA  BA  COLORE  CAN  COLORE  COLORE |                   | GRAB<br>1 | 2<br>2<br>2<br>3 | v e | ESTIMATED NO./SQ. METER |
| SCA  | CPHEMEROPTERA     | 1         |                  |     |                         |
| S. 3 10 4  RIDAE  RENIA  CLOAE  SCA  CLOAE  CLOADTERA  A 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | CAENIDAE          |           |                  |     |                         |
| RIDAE RIDAE RELLA CIDAE COLOAE | CAENIS            | m         | 9                | 4   |                         |
| RELLIDAE RELLIDAE RELLIDAE RELLIDAE RELLIDAE SCA CIDAE SCA CIDAE SCA RENIDAE RENA REMA REMA REMA REMA REMA REMA REMA REM   |                   |           |                  |     |                         |
| RELLIDAE RELLA RELLIDAE SCA CIDAE SCA CIDAE SCA HEMEROPTERA HOOOTERA HEMEROPTERA HEMEROPTERA HEMEROPTERA HOOOTERA HEMEROPTERA HEMEROPTERA HOOOTERA  |                   | 1         |                  |     |                         |
| RELLIDAE  ERELLA  CIDAE  SCA  CIDAE  SCA  HEMEROPTERA  HE | HEXAGENIA         | 7         | _                | 0   |                         |
| ERELLA 4 3 2  CIDAE SCA  SCA  WEMA   |                   |           |                  |     |                         |
| CIDAE SCA HEMEROTERA HEMEROPTERA HEMEROPTE |                   | •         |                  | •   |                         |
| CIDAE SCA SCA NEMA HEMEROPTERA HEMEROPTERA HEMEROPTERA HEMEROPTERA HEMEROPTERA HEMEROPTERA HEMEROPTERA HEMEROPTERA HEMEROPTERA HOOODIOAE CENTRIDAE HOOODIOAE   |                   | •         |                  |     |                         |
| SCA  | BAETISCIDAE       |           |                  |     |                         |
| NEMA   | BAETISCA          | 0         | _                | 0   |                         |
| NEMA   | ****              |           |                  |     |                         |
| HEMEROPTERA HEMEROPTERA HEMEROPTERA  LEDPTERA LEOPTERA LEOPTERA TERA TOENTRUDAE TOENTRUD | HEPTAGENI IDAE    | •         |                  |     |                         |
| FERA  FERA  LEOPTERA  TERA  TERA  TERA  TERA  TERA  TERA  TERA  TO 1 0 1 0 2 0 2 0 3 0 5 0 5 0 5 0 5 0 6 0 6 0 7 0 7 0 7 0 7 0 7 0 7 0 7 0 7 0 7 0 7   | STENDINEMA        | -         |                  | 0   |                         |
| ERA  LEOPTERA  LEOPTERA  LEOPTERA  TERA  TO 3  TO 5  T | ALL EPHEMEROPTERA |           |                  |     | 213                     |
| ERA  LEOPTERA  LEOPTERA  CENTRIDAE  ATOPSYCHE  ATOPSYCH |                   |           |                  |     |                         |
| LEOPTERA  LEOPTERA  CENTRIDAE  CENTRIDAE  CENTRIDAE  ATOPSYCHE  AT | COLEOPTERA        |           |                  |     |                         |
| LEOPTERA  CENTRIDAE  CENTRIDAE  SYCHIDAE  MATOPSYCHE  MATOPSYCHE  MATOPSYCHE  MATOPSYCHE  CIDES  CIDES  CIDES  CLIDES  | CASSIS            | •         | •                |     |                         |
| TERA CENTRIDAE VCENTRUS  YCENTRUS  Y | DOSIRAPHIA        | 0         | -                | 0   |                         |
| TERA CENTRIDAE VCENTRIDAE VCENTRUS SYCHIDAE ATOPSYCHE ATOPSYCHE ATOPSYCHE ATOPSYCHE ATOPSYCHE ATOPSYCHE ATOPSYCHE ATOPSYCHE ATOPSYCHE ATOPSIS  | ALL COLEDATEDA    |           |                  |     | 1                       |
| TERA CENTRIDAE VCENTRUS YCENTRUS YCENTR | ALL COLECTIONS    |           |                  |     | •                       |
| CENTRIDAE  YCENTRUS  YCENT | TRICHOPTERA       |           |                  |     |                         |
| YCENTRUS  YCENTRUS  YCENTRUS  YCHIDAE  YCENTRUS  1 0 3  FRIDAE  CIDES  TROPODIDAE  CLIPSIS  TOUDTERA  1 0 0  2 0  1 0 0   | BRACHYCENTRIDAE   |           |                  |     |                         |
| SYCHIDAE  ATOPSYCHE  1 0 3  FRIDAE  CIDES  TS  TYROPODIDAE  PHILIDAE  PHILID | BRACHYCENTRUS     | -         | -                | 0   |                         |
| NYCHIDAE  MATOPSYCHE  1 0 3  FRIDAE  CIDES  1 0 3  FRIDAE  CIDES  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0 0 |                   |           |                  |     |                         |
| # TOP STORE  | HYDROPSYCHIDAE    |           |                  |     |                         |
| FSYCHE  FERIDAE  CIDES  CIDES  TIS  NTROPODIDAE  CLIPSIS  PHILIDAE  TCHOPTERA  | CHEUMATOPSYCHE    | 23        |                  | n   |                         |
| ERIDAE CIDES CIDES CIDES 1 0 0 1 S NTROPODIDAE CLIPSIS PHILIDAE 1 0 0 2 1 1 0 0 0 2 0 0 2 1 1 0 0 0 2 0 0 2 1 1 0 0 0 2 1 1 0 0 0 2 1 1 0 0 0 2 1 1 0 0 0 2  | HYDBORYCHE        | -         |                  | •   |                         |
| CODES  |                   |           |                  | ,   |                         |
| CIDES  IS  IS  INTROPODIDAE  CLIPSIS  PHILIDAE  PTILA  ICHOPTERA   | LEPTOCERIDAE      |           |                  |     |                         |
| 15  NTROPODIDAE  CLIPSIS  PHILIDAE  PTILA  ICHOPTERA   | MYSTACIDES        | 0         |                  | 0   |                         |
| IS   |                   | )         |                  | ,   |                         |
| MTROPODIDAE  CLIPSIS  CLIPSIS  PHILIDAE  0 0 2  ICHOPTERA  | OECETIS           | -         |                  | 0   |                         |
| NTROPGDIDAE  CLIPSIS  PHILIDAE  0 0 2  ICHOPTERA   |                   |           |                  |     |                         |
| CLIPSIS 4 3 0 PHILIDAE 0 0 2 ICHOPTERA   | POLYCENTROPODIDAE |           |                  |     |                         |
| PHILIDAE PHILIDAE PHILIDAE COCO COCO COCO COCO COCO COCO COCO CO   | NEURECLIPSIS      | 4         |                  | 0   |                         |
| PTILA 0 0 2  |                   |           |                  |     |                         |
| CHOPTERA   | PROTOBLE LOAD     | c         |                  | c   |                         |
| ICHOPTERA  |                   | •         |                  |     |                         |
|  | ALL TRICHOPTERA   |           |                  |     | 317                     |
|  |                   |           |                  |     |                         |

| MACROZGOBENTHOS PONAR GRAB COUNT DATA   |             |             |     | 5/3/83  |
|---|-------------|-------------|-----|---|
| TRANSECT 2 STATION 2 (CONT'D)           | GRA         | GRAB COUNTS | STA | ESTIMATED   |
|   |             | 7           | 6   | NO./SQ. METER   |
| GASTROPODA                              | ;<br>;<br>; | !<br>!<br>! | 1   | •<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>•<br>• |
| AMNICOLA                                | 4           | 9           | 5   |   |
| * |             |             |     |   |
| ELIMIA LIVESCENS                        | 27          | 38          | =   |   |
|   |             |             |     |   |
| PHYSA                                   | <b>60</b>   | 0           | 7   |   |
| J                                       |             |             |     |   |
| ALL GASTROPODA                          |             |             |     | 833   |
| PELECYPODA                              |             |             |     |   |
| SPHAERIIDAE                             |             |             |     |   |
| PISIDIUM                                | 0           | t.          | 0   | 124   |
|   |             |             |     |   |
| ALL PELECYPODA                          |             |             |     | 124   |

| HACKUZUUBENITUS PUNAK GRAB CUUNI DAIA |           |             |     | 5/ 3/83                    |
|---------------------------------------|-----------|-------------|-----|----------------------------|
| ST. CLAIR RIVER TRANSECT 2 STATION 3  |           | į           |     |                            |
|                                       |           | GRAB COUNTS | S E | ESTIMATED<br>NO./SO. METER |
| FISH<br>COTTUS BAIRDII                | 0         | -           | ٥   | 7                          |
| ALL FISH                              |           |             |     | ,                          |
| CNIDARIA<br>HYDRA                     | <b>5</b>  | , <b>2</b>  | 23  | 1012                       |
| ALL CNIDARIA                          |           |             |     | 1012                       |
| RHABDOCOELA                           | •         | 0           | -   | 62                         |
| NEMERTINEA                            | 0         | -           | 60  | 62                         |
| NEMATODA                              | •         | φ           | 8   | 110                        |
| OLIGOCHAETA<br>Nais                   | <b>58</b> | c           | 80  |                            |
| SPIROSPERMA                           | 0         | 6           | 10  |                            |
| OTHER<br>ALL OLIGOCHAETA              | 148       | <b>5</b>    | 38  | 1729                       |
| POLYCHAETA MANAYUNKIA SPECIOSA        | 0         | -           | 0   |                            |
| CLADGCERA<br>DAPHNIA                  | 8         | 0           | -   | 21                         |
| ALL CLADOCERA                         |           |             |     |                            |

|   |                  |             |         | 50/F /C       |
|---|------------------|-------------|---------|---------------|
| TRANSECT 2 STATION 3 (CONT'D)           | 8400             | SPAR COUNTS | 7       | FSTIMATED     |
| NOX                                     | -                | 2           |         | NO./SO. METER |
| COPEPODA<br>CYCLOPS BICUSPIDATUS        | T.               | •           | ٥       |               |
|   | )                | )           | •       |               |
| DIAPTOMUS                               | ^                | -           | a       |               |
| HARPACTICOIDA                           | 42               | 0           | 0       |               |
| LIMNDCALANUS                            | -                | -           | 8       |               |
| ALL COPEPODA                            |                  |             |         | 420           |
| OSTRACODA                               | -                | 0           | 0       | 7             |
| AMPHIPODA<br>GAMMARIS                   | -                | 0           | -       |               |
|   |                  | •           | (       |               |
| HYALELLA AZTECA                         | -                | 7           | 0       |               |
| PONTOPOREIA HOYI                        | 8                | 0           | 0       |               |
| PHIPODA                                 |                  |             |         | 06            |
| DIPTERA                                 |                  | !           | ;       | . !           |
| CHIRONOMIDAE                            | 5<br>2<br>2<br>2 | t<br>T      | 96<br>- | 040           |
| ALL DIPTERA                             | )                | •           |         | 1068          |
| EPHEMEROPTERA                           |                  |             |         |               |
| CAENIDAE<br>CAENIS                      | 0                | -           | 8       |               |
|   |                  |             |         |               |
| EPTEMENT LIDER<br>EPTEMENT LLA          | ō                | <b>6</b>    | 0       |               |
| 1 1 2 2 1 1 2 2 1 1 1 2 2 1 1 1 1 1 1 1 |                  |             |         |               |
| HEPTAGENIIDAE<br>Stennmena              | c                | 4           | 0       |               |
|   | •                |             | ,       |               |
| ALL EPHEMEROPTERA                       |                  |             |         | 138           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |                       |                  | 5/ 3/83 |
|---------------------------------------|-----------------------|------------------|---------|
| TRANSECT 2 STATION 3 (CONT'D)         | 940                   |                  |         |
| TAXON                                 | -                     | 4 2 3            | NO./50. |
| COLEOPTERA<br>ELMIDAE                 | 1<br>!<br>!<br>!<br>! | ;<br>;<br>;<br>; | 1       |
| CUBIRAPHIA                            | -                     | 0                | 0       |
| ALL COLEOPTERA                        |                       |                  | 7       |
| TRICHOPTERA                           |                       |                  |         |
| BRACHYCENTRIDAE<br>BRACHYCENTRUS      | -                     | c                |         |
|                                       | •                     | )                |         |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE      | 62                    | 37 12            |         |
| 2114F189F189P                         |                       |                  |         |
| HYDROPSYCHE                           | 0                     | 7 10             |         |
| LEPTOCERIDAE                          |                       |                  |         |
| CERACLEA                              | 0                     | 0                |         |
| DECETIS                               | -                     | 0                |         |
|                                       |                       |                  |         |
| RMYACOPHILIDAE<br>PROTOPTILA          | -                     | 0                |         |
| J 5 1 1 2 5 5 5                       | ı                     |                  |         |
| ALL TRICHOPTERA                       |                       |                  | 97.1    |
| HEMIPTERA                             |                       |                  |         |
| CORIXIDAE                             | -                     | 0                | ^       |
| ACARINA                               | 6                     | 0                | 138     |
| GASTROPODA                            |                       |                  |         |
| AMNICOLA                              | 7                     | 9                |         |
| ELIMIA LIVESCENS                      | 27                    | 60               |         |
| LYMMAEA                               | 0                     | 0                |         |
| ACCORDED ACCORDED                     |                       |                  | e<br>Q  |
|                                       |                       |                  | 0       |
| PELECYPOOA                            |                       |                  |         |
| SPHAERIIDAE<br>PISIDIUM               | c                     | 17               | 111     |
|                                       | •                     |                  |         |
| ALL PELECYPODA                        |                       |                  | 117     |
|                                       |                       |                  |         |

|                                      |             |    |      | 20 /2                           |
|--------------------------------------|-------------|----|------|---------------------------------|
| ST. CLAIR RIVER TRANSECT 3 STATION 4 | GRAB COUNTS | 5  | JNTS | ESTIMATED                       |
| AXON                                 | -           | ~  | 6    | NO./SQ. METER                   |
|                                      |             |    |      | ;<br>!<br>!<br>!<br>!<br>!<br>! |
| FISH EGGS                            | ო           | ~  | n    | 06                              |
| -                                    |             |    |      | 06                              |
| CNIDARIA                             |             |    |      |                                 |
| HYDRA                                | 7           | တ  | 4    | 138                             |
| ALL CNIDARIA                         |             |    |      | 138                             |
| RHABDOCOELA                          | -           | 6  | 0    | 28                              |
| NEMERTINEA                           | 0           | 0  | 7    | 84                              |
| NEMATODA                             | 6           | -  | 9    | 158                             |
| OLIGOCHAETA                          | 83          | 17 | 279  | 2610                            |
| CLADOCERA<br>DAPHNIA                 | 0           | 8  | 0    | <del>2</del>                    |
| ALL CLADGERA                         |             |    |      | ī                               |
| COPEPODA<br>CYCLOPOIDIDAE            | -           | 0  | 0    |                                 |
| CYCLOPS BICUSPIDATUS                 | 0           | 0  | -    |                                 |
| DIAPTOMUS                            | 13          | N. | 8    |                                 |
| HARPACTICOIDA                        | 0           | 0  | -    |                                 |
| LIMNOCALANUS                         | -           | 0  | -    |                                 |
| ALL COPEDODA                         |             |    |      | 172                             |
|                                      |             |    |      |                                 |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |            |       | 5/ 3/83       |
|---------------------------------------|------------|------------|-------|---------------|
| TRANSECT 3 STATION 1 (CONT'D)         | g          | OF STATES  | O TAN | COTAMATOR     |
| TAXON                                 |            | 200        | . e   | NO./SQ. METER |
|                                       | 0          | -          | 0     | 7             |
| AMPHIPODA                             |            |            |       |               |
| GAMMARUS                              | 0          | 0          | -     |               |
|                                       | 0          | 0          | -     |               |
| ALL AMPHIPODA                         |            |            |       | <b>‡</b>      |
| DIPTERA                               |            |            |       |               |
| CHIRONOMIDAE                          | <u>ნ</u> ( | <b>6</b> € | 214   | 2934          |
| ALL DIPTERA                           | >          | >          | -     | 2941          |
| TRICHOPTERA                           |            |            |       |               |
| CERACLEA                              | 0          | 0          | -     |               |
| MYSTACIDES                            | -          | 0          | 8     |               |
| ALL TRICHOPTERA                       |            |            |       | 28            |
| ACARINA                               | 0          | 0          | -     | 7             |
| GASTROPODA                            |            |            |       |               |
| ELIMIA LIVESCENS                      | 4          | 0          | 0     | 28            |
| ALL GASTROPODA                        |            |            |       | 28            |
| PELECYPODA                            |            |            |       |               |
| SPHAERIIDAE                           | •          | (          | •     | •             |
|                                       | 2          | 0          | -     | •             |
| ALL PELECYPODA                        |            |            |       |               |

| MACKULOOBENINGS FUNAN GRAD COON! UAIN      |      |                      |          | 60/6 /6                    |
|--|------|----------------------|----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 3 STATION 2 TAXON | GRAB | GRAB COUNTS<br>1 2 3 | STS<br>3 | ESTIMATED<br>NO./SQ. METER |
| t  | 7    | 4                    | 0        | 76                         |
| ALL FISH                                   |      |                      |          | 76                         |
| CNIDARIA                                   | 6    | o                    | ស        | 117                        |
| ALL CNIDARIA                               |      |                      |          | 117                        |
| NEMERTINEA                                 | 0    | -                    | 0        | 7                          |
| NEMATODA                                   | •    | -                    | 0        | 62                         |
| OLIGOCHAETA<br>Nais                        | 0    | 0                    | -        |                            |
| OTHER<br>ALL OLIGOCHAETA                   | 91   | _                    | <b>6</b> | 847                        |
| CLADOCERA<br>DAPHNIA                       | -    | 0                    | -        | 2                          |
| ALL CLADOCERA                              |      |                      |          | 7                          |
| -  | 0    | -                    | 8        |                            |
| DIAPTOMUS                                  | က    | ∞                    | 7        |                            |
| LIMNOCALANUS                               | -    | -                    | 0        |                            |
| ALL COPEPODA                               |      |                      |          | 158                        |
| AMPHI PODA<br>Gammarus                     | -    | 0                    | 0        |                            |
| HYALELLA AZTECA                            | -    | 0                    | 0        |                            |
| ٠  |      |                      |          | 4                          |
|  |      |                      |          |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA        |          |                      |          |           |       |
|--|----------|----------------------|----------|-----------|-------|
| TRANSECT 3 STATION 2 (CONT'D)                | GRA      | GRAB COUNTS          | INTS     | ESTIMATED | Ī     |
| TAXON  | -        | 2                    | 6        | NO./50.   | 7 - F |
| DIPTERA DIPTERA EMPIDIDAE ALL DIPTERA        | 4<br>0 & | 149 378 107<br>3 2 7 | 101<br>T | 4449      |       |
| TRICHOPTERA<br>HYDROPSYCHEDAE<br>HYDROPSYCHE | 0        | 0                    | -        |           |       |
| LEPTOCERIDAE<br>CERACLEA                     | m        | 0                    | 0        |           |       |
| OECET1S                                      | 0        | -                    | 0        |           |       |
| RHYACOPHILIDAE<br>PROTOPTILA                 | 0        | -                    | 0        | :         |       |
| ALL TRICHOPTERA                              |          |                      |          | <b>=</b>  |       |
| ACARINA                                      | 0        | -                    | 0        | ۲         |       |

| MACROLOUGENINGS PUNAR GRAD COUNT DATA   |   |             |            | 50/5 /6    | 2     |
|---|---|-------------|------------|------------|-------|
| ST. CLAIR RIVER TRANSECT 3 STATION 3    |   | į           | :          |            |       |
| NOX #                                   | EKAB<br>-                               | GKAB COUNTS | <u>,</u> 6 | NO./SO. ME | METER |
|   | 1 | ;           |            |            | ;     |
| TOTAL FORCE                             | •                                       | 5           | 0          | 110        |       |
| 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | •                                       | !           |            | ?          |       |
| -                                       |   |             |            | 110        |       |
| CNIDARIA                                |   |             |            |            |       |
| HYDRA                                   | -                                       | -           | 7          | 28         |       |
| ALL CNIDARIA                            |   |             |            | 28         |       |
| NEMATODA                                | 8                                       | ~           | ო          | 48         |       |
| OLIGOCHAETA                             | 6                                       | 7           | -          | 111        |       |
| COPEPODA                                |   |             |            |            |       |
| CYCLOPOIDIDAE                           | 0                                       | 0           | 8          |            |       |
| DIAPTOMUS                               | 6                                       | ø           | 4          |            |       |
| LIMNDCALANUS                            | ٥                                       | 8           | 0          |            |       |
| ALL COPEPODA                            |   |             |            | 138        |       |
| OSTRACODA                               | ٥                                       | -           | 0          | 7          |       |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE    | ဝ္က ၈                                   | 15          | <u>د</u> 0 | 468        |       |
| ALL DIPTERA                             |   |             |            | 496        |       |
| ACARINA                                 | -                                       | 0           | 0          | 7          |       |
|   |   |             |            |            |       |

| AIRO INDO DEUS MENO COMMISSIONO DE LA COMISSIONO DE LA COMMISSIONO DE LA COMMISSIONO DE LA COMMISSIONO DELLA COMMISSIONO DE LA COMMISSIONO DELLA COMPISSIONO DELLA COMPISSIONO DELLA COMPISSIONO DELLA COMPISSIONO DELLA COMPISSIONO DELLA COMPISSIONO | <b>.</b>                                      |       |    | 59/6/6  |
|--|---|-------|----|---|
| ST. CLAIR RIVER TRANSECT 4   | 4 STATION 1                                   | Š     | 4  |   |
| TAXON  |   | 1 2 3 | 0  | NO./SQ. METER   |
|  | 0 2 3 5 5 6 6 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 |       | :  | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
| FISH EGGS  | 0   | -     | 0  | 7   |
|  |   |       |    | ^   |
| UNIDARIA   |   |       |    |   |
| HYDRA  | <b>5</b>                                      | 33    | 67 | 792   |
| ALL CNIDARIA   |   |       |    | 792   |
| RHABDOCOELA  | -   | 0     | ო  | 28  |
| NEMERTINEA   | •   | -     | ٥  | •   |
| NEMATODA   | 205   | 83    | 8  | 2782  |
| HIRUDINEA<br>ERPOBDELLIDAE   | -   | 0     | 0  | ^   |
| OL I GOCHAETA<br>NA I S  | 32  |       | 96 |   |
| SPIROSPERMA  |   | 8     | 26 |   |
| STYLARIA   | •   | 0     | -  |   |
| OTHER  | 9   | :     | ä  |   |
| ALL OLIGOCHAETA  |   | 0     | 8  | 5530  |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA  | 0   | -     | 0  | ۴   |
| ALC POLYCHAETA   |   |       |    |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |      |               |             | 5/ 5/83                    |
|---|------|---------------|-------------|----------------------------|
| TRANSECT 4 STATION ! (CONT'D)             | •    |               | !           |                            |
| TAXON                                     | - 68 | 5<br>20<br>20 | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| CLADOCERA<br>DAPHNIA                      | 0    | 7             | -           | 24                         |
| ALL CLADOCERA                             |      |               |             | 21                         |
| COPEPODA<br>DIAPTOMUS                     | 0    | •             | =           |                            |
| HARPACTICOIDA                             | 4    | 4             | 20          |                            |
| LIMMOCALAMUS                              | 0    | 0             | 7           |                            |
| ALL COPEPODA                              |      |               |             | 399                        |
| OSTRACODA                                 | -    | -             | 0           | 4                          |
| AMPHIPODA<br>Gammarus                     | 0    | 0             | Ξ           |                            |
|   | •    | 0             | -           |                            |
| ALL AMPHIPODA                             |      |               |             | 69                         |
| DIPTERA<br>CHIRONOMIDAE                   | 20   | 2             | 102         | 1611                       |
| EPHEMEROPTERA<br>Ephemeridae<br>Hexagenia | 0    | -             | 0           | ·                          |
| EPHEMERELLIDAE<br>EPHEMERELLA             | 0    | -             | 4           |                            |
| ALL EPHEMEROPIERA                         |      |               |             | 41                         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           | DATA |             |      | 5/ 5/83       |
|---|------|-------------|------|---------------|
| TRANSECT 4 STATION 1 (CONT'D)                   | 3    | GRAB COUNTS | UNTS | ESTIMATED     |
| TAXON   | -    | 7           |      | NO./SQ. METER |
| TRICHOPTERA<br>Hydrodsychidae<br>Cheumatopsyche | 8    | ٥           | -    | 1             |
| LEPTOCERIDAE                                    | 0    | -           | 0    |               |
| OTHER<br>ALL TRICHOPTERA                        | -    | 0           | 0    | 34            |
| ACARINA   | ч    | *           | •    | 76            |
| GASTROPODA AMNICOLA                             | 62   | 6           | 112  |               |
| ELIMIA LIVESCENS                                | 63   | 5           | 22   |               |
| GYRAULUS  | 6    | 8           | •    |               |
| LYMNAEA   | 0    | -           | ŧ.   |               |
| ANYSA   | n    | ~           | ø    |               |
|   | 9    | Š           | 76   |               |
| ALL GASTROPODA                                  |      |             |      | 5392          |
| PELECYPODA<br>Sphafbitdaf                       |      |             |      |               |
| PISIDION  | 25   | 124         | 23   |               |
| SPHAERIUM                                       | 0    | 0           | 8    |               |
| ALL SPHAERIIDAE<br>ALL PELECYPODA               |      |             |      | 1405          |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA | COUNT DATA           |           |         |          | 5/ 5/83       |
|---------------------------------------|----------------------|-----------|---------|----------|---------------|
| ST. CLAIR RIVER TRANSECT              | TRANSECT 4 STATION 2 | 000       | Ş       | <u> </u> | 1             |
| TAXON                                 |                      | , .       | 4 2 3   | 200      | NO./SO. METER |
| I                                     |                      | 155       | 0       | 0        | 1067          |
| ALL FISH                              |                      |           |         |          | 1067          |
| PORIFERA<br>SPONGILLA<br>             |                      | +         | 0       | 0        | + 0           |
| CNIDARIA<br>Hydra                     |                      | 369       | 4<br>10 | <u>-</u> | 5681          |
| ALL CNIDARIA                          |                      |           |         |          | 5681          |
| RHABDOCOELA                           |                      | <b>38</b> | NO.     | 0        | 227           |
| NEMERTINEA                            |                      | 0         | 12      | 0        | 83            |
| NEMATODA                              |                      | S<br>S    | 42      | 33       | 937           |
| HI RUDI NEA<br>HI RUDI NEA            |                      | -         | 0       | 0        | 1             |
| OLIGNCHAETA<br>Nais                   |                      | <b>8</b>  | 10      | 89       |               |
| SPIROSPERMA                           |                      | 22        | 4       | 7        | •             |
| OTHER                                 |                      | 939       | 487     | 222      | 6             |
| ALL ULIGOLIAR: A                      |                      |           |         |          | 20.0          |

| MACKOZOOBENTHOS PONAR GRAB COUNT DATA                                  |               |             |        | 5/ 5/83  |
|--|---------------|-------------|--------|--|
| TRANSECT 4 STATION 2 (CONT'D)  | ļ             | į           |        |  |
| TAXON  | GRAE<br>-     | GRAB COUNTS | S E S  | ESTIMATED<br>NO./SQ. METER                               |
|  | <b>1</b> 0    | 0           | -      | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| DIAPTOMUS  | 13            | ო           | 01     |  |
| HARPACTICOIDA  | 32            | 8           | 5      |  |
| LIMNOCALANUS   | 6             | 0           | -      |  |
| ALL COPEPODA   |               |             |        | 937  |
| OSTRACODA  | 27            | m           | 0      | 207  |
| AMPHI PODA<br>GAMMARUS   |               | 0           | 0      |  |
|  | •             | •           | 0      |  |
| PONTOPOREIA HOYI   | <b>60</b>     | 0           | 8      |  |
| <  |               |             |        | 145  |
| ISOPODA ASELLUS ALL ISOPODA  | -             | •           | •      |  |
| TERRESTRIAL INSECT   | ø             | 0           | 0      | <b>=</b>   |
| DIPTERA<br>CFRATOPOGONIDAE<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALL DIPTERA | 38 3<br>2 8 3 | 0.74        | 0 20 0 | 4001   |
|  |               |             |        |  |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |          |             |     | 5/ 5/83                                 |
|---------------------------------------|----------|-------------|-----|---|
| TRANSECT 4 STATION 2 (CONT'D)         | GRAB     | GRAB COUNTS | STS | ESTIMATED NO./SO. METER                 |
| TAXON                                 |          | . ;         |     | 1 |
| TERA                                  |          |             |     |   |
| CAENIDAE                              | 7        | 0           | 0   |   |
| 71241                                 |          |             |     |   |
| EPHEMERELLIDAE                        | •        | c           | V   |   |
| EPHEMERELLA                           | N        | ,           | ,   |   |
| HED TAGEN I DAE                       |          | ,           | •   |   |
| STENONEMA                             | <b>-</b> | 0           | 7   |   |
| ALL EPHEMEROPTERA                     |          |             |     | 103                                     |
| TRICHOPIERA                           |          |             |     |   |
| HYDROPSYCHIDAE                        | 4        | -           | ٥   |   |
| CHEUMATOPSYCHE                        | •        | •           | •   |   |
| HYDROPSYCHE                           | w        | 8           | 4   |   |
|                                       | -        | 0           | 0   |   |
| OTHER COLDS                           |          |             |     |   |
| CERACLEA                              | -        | -           | 0   |   |
|                                       | -        | 0           | 0   |   |
| NECTOP SYCHE                          |          |             |     | 1                                       |
| ALL TRICHOPTERA                       |          |             |     | e 4.                                    |
| ODGNATA                               |          |             |     |   |
| GOMPHIDAE                             | -        | 0           | ٥   |   |
|                                       |          |             |     | -                                       |
| ALL ODONATA                           |          |             |     | •                                       |
| ACARINA                               | ō        | 4           | 0)  | 241                                     |
|                                       | 7        | 0           | -   | 21                                      |

{

TARDIGRADA

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |      | 5/ 2/83       |
|---------------------------------------|------------|-------------|------|---------------|
| TRANSECT 4 STATION 2 (CONT'D)         | GR.<br>AR  | GRAB COUNTS | JNTS | ESTIMATED     |
| TAXON                                 | -          | 2           | 6    | NO./SQ. METER |
|                                       | ~          | ~           | o    |               |
| AMALCOLA                              | •          | 1           | )    |               |
| ELIMIA LIVESCENS                      | ~          | ဓ္ဓ         | 0    |               |
| GYRAULUS                              | <b>K</b> O | -           | 0    |               |
| PHYSA                                 | ĸ          | យ           | 4    |               |
| ALL GASTROPODA                        |            |             |      | 386           |
| PELECYPODA<br>Sphaeridae<br>Pisidium  | •          | €0          | -    | 110           |
| ALL PELECYPODA                        |            |             |      | 011           |

| ST. CLAIR RIVER TRANSECT 4 STATION 3                | ,        | ,     |     |                |
|---|----------|-------|-----|----------------|
| TAXON   | ž -      | 4 2 3 | 200 | NO./SQ. METER  |
| CNIDARIA<br>Hydra                                   | 275      | 274   | 254 | 5530           |
| ALL CNIDARIA  |          |       |     | 5530           |
| RHABDOCOELA   | က        | ຜ     | 6   | 76             |
| NEMERTINEA  | <b>6</b> | 0     | 0   | 10<br>10<br>10 |
| NEMATODA  | 2        | 5     | е   | 220            |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>HELOBDELLA STAGNALIS | -        | 0     | 0   | ٠              |
| DLIGOCHAETA<br>NAIS                                 | 102      | 141   | 33  |                |
| SPIROSPERMA   | -        | 0     | ю   |                |
| STYLARIA  | -        | 0     | 0   |                |
| OTHER<br>ALL OLIGOCHAETA                            | 399      | 5     | 113 | 6157           |
| MANAYUNKIA SPECIOSA                                 | 0        | 7     | 0   | <b>ā ā</b>     |
| CLADOCERA DAPHAIA                                   | 0        | -     | 0   | r r            |
| ALL CLADOCENA                                       |          |       |     | •              |

1

|                               |       |              |     |               | ,     |
|-------------------------------|-------|--------------|-----|---------------|-------|
| TRANSECT 4 STATION 3 (CONT'D) | A G G | STATION BAD  | V L | FSTIMATED     | ë     |
| ,                             | -     | 7            | 6   | NO./SQ. METER | METER |
| COPEPODA                      |       |              |     |               |       |
| CYCLOPS BICUSPIDATUS          | -     | n            | m   |               |       |
| _                             | ស     | -            | 7   |               |       |
|                               | ć     | •            |     |               |       |
| HARPACTICOIDA                 | 35    |              | ٥   |               |       |
| LIMNDCALANUS                  | 0     | -            | 0   |               |       |
| ALL COPEPODA                  |       |              |     | 420           |       |
| OSTRACODA                     | -     | 0            | 0   | ^             |       |
| AMPHIPODA                     |       |              |     |               |       |
| GAIMARUS                      | 1     | -            | 9   |               |       |
|                               | 0     | 8            | 9   |               |       |
| PONTOPOREIA HOYI              | ស     | 0            | 8   |               |       |
| ALL AMPHIPODA                 |       |              |     | 200           |       |
| TERRESTRIAL INSECT            | •     | -            | -   | <b>‡</b>      |       |
| DIPTERA                       | c     | -            | c   |               |       |
| CHERONOMIDAE                  | 158   | 5.           | B   | 2500          |       |
| EMPIDIDAE<br>All diptera      |       | <del>.</del> | >   | 2534          |       |

| MACKUZUUBENIHUS PUNAK GRAB COUNT DATA |      |          |                       | 5/ 5/83                    |
|---------------------------------------|------|----------|-----------------------|----------------------------|
| TRANSECT 4 STATION 3 (CONT'D)         | ě    | j        |                       |                            |
|                                       | - 65 | 8<br>2 6 | GRAB COUNTS           | ESTIMATED<br>NO./SQ. METER |
|                                       |      | !        | ,<br>,<br>,<br>,<br>, | * 1                        |
| EPHEMERELLA                           | 80   | 9        | ō                     |                            |
| BAETISCIDAE                           |      |          |                       |                            |
| BAETISCA                              | 0    | 0        | -                     |                            |
| HEPTAGENI IDAE                        |      |          |                       |                            |
| STENDNEMA                             | -    | 0        | -                     |                            |
| ALL EPHEMEROPTERA                     |      |          |                       | 186                        |
| TRICHOPTERA                           |      |          |                       |                            |
| CHEUMATOPSYCHE                        | 5    | មា       | 8                     |                            |
| HYDROPSYCHE                           | c    | . с      | -                     |                            |
|                                       | •    | •        | •                     |                            |
| LEPTOCERIOAE                          | (    | (        | •                     |                            |
| 370-3010EV                            | 0    | >        | -                     |                            |
| OECETIS                               | 0    | -        | 0                     |                            |
| POLYCENTROPODIOAE                     |      |          |                       |                            |
| NEURECLIPSIS                          | 8    | 0        | 0                     |                            |
| ALL TRICHOPTERA                       |      |          |                       | 165                        |
| PLECOPTERA                            | 7    | 0        | 0                     | . 41                       |
| ACARINA                               | =    | 12       | 35                    | 399                        |
|                                       |      |          |                       |                            |

| TRANSECT 4 STATION 3 (CONT'D)           |                       |             |            |   |
|---|-----------------------|-------------|------------|---|
| TAXON                                   | GRAB                  | GRAB COUNTS | NTS<br>3   | ESTIMATED NO./SQ. METER                 |
| GASTROPODA                              | !<br>!<br>!<br>!<br>! |             | )<br> <br> | 1 |
| AMNICOLA                                | 0                     | 0           | -          |   |
| ELIMIA LIVESCENS                        | R                     | ٥           | =          |   |
| ***********                             |                       | 1           |            |   |
| GYRAULUS                                | 8                     | -           | 0          |   |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |                       |             |            |   |
| LYMNAEA                                 | 0                     | 0           | -          |   |
| • |                       |             |            |   |
| PHYSA                                   | 8                     | 0           | -          |   |
| !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! |                       |             |            |   |
| ALL GASTROPODA                          |                       |             |            | 145                                     |
| PELECYPODA                              |                       |             |            |   |
| SPHAERIIDAE                             |                       |             |            |   |
| PISIDIUM                                | 7                     | -           | 7          | 34                                      |
| *************************************** |                       |             |            |   |
| ALL PELECYPODA                          |                       |             |            | 34                                      |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |              |      | 5/ 5/83       |
|---------------------------------------|------------|--------------|------|---------------|
| ST. CLAIR RIVER TRANSECT 5 STATION 1  |            | STAILON BADS | NT V | COTIMATED     |
| TAXON                                 | <b>5</b> - | 6<br>5<br>4  | 6    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 66         | 7            | 638  | 5564          |
| ALL CNIDARIA                          |            |              |      | 5564          |
| RHABDOCOELA                           | o          | 52           | 36   | 899           |
| TRICLADIDA                            | N          | 0            | 50   | 152           |
| NEMERTINEA                            | 8          | 0            | 0    | 7             |
| NEMATODA                              | 52         | 262          | 196  | 3512          |
| HIRUDINEA<br>ERPOBDELLIDAE            | -          | 0            | 0    |               |
| HELOBDELLA TRISERIALIS                | 0          | 0            | -    |               |
| PISCICOLIDAE<br>PISCICOLA             | 0          | -            | 0    |               |
| OTHER<br>ALL HIRUDINEA                | -          | 0            | •    | 28            |
| OLIGOCHAETA<br>Nais                   | 53         | Ξ            | 38   |               |
| SPIROSPERMA                           | 72         | 4            | 7.4  |               |
| OTHER<br>ALL DIGOCHAETA               | 677        | 825          | 613  | 16583         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |               |        | 5/ 5/83       |
|---------------------------------------|------|---------------|--------|---------------|
| TRANSECT 5 STATION 1 (CONT'D)         | 8400 | ATMINITY MAGS | ų<br>E | COTTANTE      |
| TAXON                                 | -    | § ~           | , m    | NO./SQ. METER |
| CLADOCERA                             |      |               |        |               |
| ILYOCRYPTUS                           | 0    | 8             | 46     | 124           |
| ALL CLADOCERA                         |      |               |        | 124           |
| COPEPODA                              |      |               |        |               |
| DIAPTOMUS                             | 13   | 4             | ო      |               |
| HARPACTICOIDA                         | 4    | 7             | 0      |               |
| LIMMOCALANUS                          | -    | ო             | 9      |               |
| PARACYCLOPS                           | 0    | 8             | 0      |               |
| UNIDENTIFIED NAUPLII                  | 0    | -             | 0      |               |
| ALL COPEPODA                          |      |               |        | *             |
| DECAPODA                              | •    | (             | •      |               |
| OKCONECTES                            | -    | >             | >      | •             |
| ALL DECAPODA                          |      |               |        | 1             |
| OSTRACODA                             | 0    | ស             | -      | 7             |
| AMPHIPODA                             |      |               |        |               |
| GAMMARUS                              | £0   | 4             | 35     |               |
| HYALELLA AZTECA                       | ĸ    | <b>6</b>      | 0      |               |
| PONTOPOREIA HOYI                      | -    | -             | -      |               |
| ALL AMPHIPODA                         |      |               |        | . 989         |
| TERRESTRIAL INSECT                    | 0    | 0             | -      | 7             |
|                                       |      |               |        |               |

| TRANSECT 5 STATION 1 (CONT'D) TAXON   | â.<br>R   | GRAB COUNTS | UNTS<br>3 | ESTIMATED NO./SO. METER |
|---------------------------------------|-----------|-------------|-----------|-------------------------|
| DIPTERA                               | 1 1 1 1 1 | 1           |           |                         |
| CHIDOMOMICAE                          | 45.0      | 8           | 5         |                         |
| EMPTOTORE                             | 7 0       | ה כ         | 507       | 85.4                    |
| ALL DIPTERA                           | •         | >           | -         | 7444                    |
| EPHEMEROPTERA                         |           |             |           |                         |
| CAENIDAE                              |           |             |           |                         |
| CAENIS                                | 7         | ĸ           | 22        |                         |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |           |             |           |                         |
| EPHEMERIDAE                           |           |             |           |                         |
| HEXAGENIA                             | 4         | 7           | 9         |                         |
| 3 1 4 6 7 7 6 7 7                     |           |             |           |                         |
| EPHEMERELLIDAE                        |           |             |           |                         |
| EPHEMERELLA                           | 4         | 4           | 17        |                         |
| ****                                  |           |             |           |                         |
| HEPTAGENI IDAE                        |           |             |           |                         |
| STENONEMA                             | 0         | 0           | 8         |                         |
|                                       |           |             |           |                         |
| ALL EPHEMEROPTERA                     |           |             |           | . 496                   |
| COLEOPTERA                            |           |             |           |                         |
| ELMIDAE                               |           |             |           |                         |
| DUBIRAPHIA                            | -         | -           | ო         |                         |
|                                       |           |             |           |                         |
| ALL COLEOPTERA                        |           |             |           | 34                      |
| - EDIDODIEDA                          | •         | •           | •         | č                       |
| רביונטייהא                            | -         | -           | -         | 21                      |
|                                       |           |             |           | •                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |      |             |     | 5/ 5/83       |
|---|------|-------------|-----|---------------|
| TRANSECT 5 STATION 1 (CONT'D)                   | BYGS | SPAR COUNTS | V L | CCTIMATED     |
| TAXON   | -    | 3 ~         | 0   | NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | 4    | ٥           | 7   |               |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE                | -    | 0           | 0   |               |
| HYDROPSYCHE                                     | y    | 0           | -   |               |
| LEPTOCERIDAE<br>CERACLEA                        | -    | 0           | 8   |               |
| NECTOPSYCHE                                     | -    | 0           | 0   |               |
| 0ECETIS   | -    | 9           | 0   |               |
| TRIAENODES                                      | 8    | 0           | 0   |               |
| ALL TRICHOPTERA                                 |      |             |     | 275           |
| HEMIPTERA<br>CORIXIDAE                          | 0    | 0           | -   |               |
| GOMPHIDAE STYLUBUS NOTATUS                      | 0    | -           | 0   |               |
| PLECOPTERA                                      | -    | 0           | -   | 4             |
| ACCRINA   | •    | 0           | 11  | 145           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |           | 5/ 5/83                    |
|---------------------------------------|------------|-------------|-----------|----------------------------|
| TRANSECT 5 STATION 1 (CONT'D)         | 1          |             |           |                            |
| TAXON                                 | ğ <b>-</b> | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| GASTROPODA<br>ARNICOLA                | E          | 140         | 9         |                            |
|                                       | 3          | ?           | 2         |                            |
| ELIMIA LIVESCENS                      | <b>©</b>   | -           | 0         |                            |
| GYRAULUS                              | 6          | 0           | 24        |                            |
| HYSA                                  | Ø          | 7           | 34        |                            |
|                                       | ı          |             |           |                            |
| VALVATA TRICARINATA                   | <b>m</b>   | 20          | ო         |                            |
| ALL GASTROPODA                        |            |             |           | 2720                       |
| PELECYPODA .                          |            |             |           |                            |
| SPHAERIIDAE                           |            |             |           |                            |
| PISIDIUM                              | 8          | 17          | 47        |                            |
| ****                                  |            |             |           |                            |
| SPHAERIUM                             | -          | 0           | 0         |                            |
| ALL SPHAERIDAE                        |            |             |           | 461                        |
| ALL PELECYPODA                        |            |             |           | 461                        |
|                                       |            |             |           |                            |

| C MOTTATS & TOWNEST GAVID BILL TO |     |             |          |                        |
|-----------------------------------|-----|-------------|----------|------------------------|
| TRANSECT O STATION                | GR. | GRAB COUNTS | STNO     | ESTIMATED NO /SO METER |
|                                   |     |             |          |                        |
| HYDRA                             | 0   | -           | 79       | 551                    |
| ALL CNIDARIA                      |     |             |          | 551                    |
| RHABDOCOELA                       | -   | 0           | 0        | 7                      |
| NEMATODA                          | 8   | ស           | 56       | 227                    |
| OLIGOCHAETA<br>Nais               | •   | 23          | <b>8</b> |                        |
| OTHER<br>ALL OLIGOCHAETA          | 35  | ŧ.          | 116      | 1708                   |
| CLADOCERA<br>BOSMINA              | 0   | 0           | -        |                        |
| DAPHNIA -                         | 0   | ø           | 0        |                        |
| ALL CLADOCERA                     |     |             |          | 20                     |
|                                   | 0   | 0           | 8        |                        |
| DIAPTOMUS                         | -   | ĸ           | ဖ        |                        |
| HARPACTICOIDA                     | ٥   | 0           | =        |                        |
| LIMNOCALANUS                      | ~   | 8           | 0        |                        |
| ALL COPEPODA                      |     |             |          | 200                    |
| AMPHI PODA<br>Gammarus            | 0   | 0           | -        |                        |
|                                   | 0   | -           | 8        |                        |
| ALL AMPHIPODA                     |     |             |          | 28                     |

| TRANSECT 5 STATION 2 (CONY'D)         GRAB COUNTS         ESTIMATED           TERRESTRIAL INSECT         1         0         0         7           DIPTERA         30         35         90         1067           EMPLONDAL         0         0         1         1074           EMPLONDAL         0         0         1         1074           EMPLEMENTIDAE         0         2         0         1           EPHEMERILIDAE         0         2         0         1           EPHEMERILIDAE         0         2         0         2           EPHEMERILIDAE         0         2         0         3           EPHEMERILIDAE         0         2         0         3           EPHEMERILIDAE         0         0         3         3           ALL EPHEMERULA         0         0         0         3           ALL EPHEMEROPTERA         0         0         0         2           ALL EPHEMEROPTERA         0         0         0         0           ALL TRICHOPTERA         0         0         0         0           ALL PLECOPTERA         0         0         0         0   |                     |            |     |          |               |
|--|---------------------|------------|-----|----------|---------------|
| INSECT 1 2 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | 5 STATION 2         | Space      | 5   | NT V     | FCTIMATED     |
| INSECT 1 0 0 7 7 1005 1007 1 1006 1007 1 1004 1007 1 1004 1007 1 1004 1 1004 1 1004 1 1004 1 1004 1 1000 1 1 1007      |                     | <b>5</b> – | 3 % | 9 69     | NO./SQ. METER |
| DATE   |                     | -          | 0   | 0        | 1             |
| 30 35 90 1<br>RE<br>PTERA PTERA PT | DIPTERA             |            |     |          |               |
| NAE IPTERA IPTER     | CHIRONOMIDAE        | 9          | 35  | 8        | 1067          |
| NAE  FERA  PTERA  PTERA  PTERA  NO 0 1 1 89  NOA   | EMPIDIDAE           | 0          | 0   | -        |               |
| AE PTERA PTE     | ALL DIPTERA         |            |     |          | 1074          |
| NAE IF IPTERA IP     | EPHEMEROPTERA       |            |     |          |               |
| LDAE LA  | EPHEMERIDAE         |            |     |          |               |
| LA   | HEXAGENIA           | 0          | N   | 0        |               |
| DAE DAE DAE ROPTERA ROPTERA ROPTERA FERA FERA FERA FODA  |                     |            |     |          |               |
| DAE ROPTERA ROPTERA SYCHE SYCHE FERA FERA O 0 1 8 C 4 13 C 7 13 C 7 1 8 C 7 1      | EPHEMERELLA         | 0          | 21  | 43       |               |
| ROPTERA ROPTERA SYCHE SYCHE FIERA  TERA  O 0 1 FIERA  O 0 1 FIERA  O 0 1 FIERA  O 0 1  |                     |            |     |          |               |
| IOAE<br>SYCHE<br>SYCHE<br>SYCHE<br>FIERA<br>PTERA<br>PTERA<br>O 0 1 9  | STENDINES           | 0          | 0   | 80       |               |
| IOAE<br>SYCHE<br>SYCHE<br>SYCHE<br>SYCHE<br>FIEN<br>PTERA<br>PTERA<br>O 0 1<br>PODA  |                     |            |     |          |               |
| SYCHE SYCHE SYCHE SYCHE FERA FERA FERA FODA  | ALL EPHEMEROPTERA   |            |     |          | 0. <b>2</b> . |
| PSYCHE 0 4 13 PSYCHE 0 0 22 CHE 0 0 22 OPTERA 0 1 8 OPTERA 0 1 8 OPODA   | TRICHOPTERA         |            |     |          |               |
| CHE  | CHEUMATOPSYCHE      | 0          | 4   | Ę        |               |
| CHE 0 0 22 OPTERA . 0 0 1 PTERA 0000A  |                     |            |     |          |               |
| OPTERA   | HYDROPSYCHE         | 0          | 0   | 22       |               |
| PTERA 0 0 1 9 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0  | ALL TRICHOPTERA     |            |     |          | 269           |
| PTERA 0 0 1 9 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0  | PLECOPTERA          |            |     |          |               |
| PTERA 0 1 8 0 1 9 0 0 1 0000A  | PERLODIDAE          | 0          | 0   | -        | -             |
| 0 0 0 0 PODDA  | ALL PLECOPTERA      |            |     |          | •             |
| O P009A  | ACARINA             | 0          | -   | <b>0</b> | 69            |
| ALL GASTROPODA 7   | GASTROPODA<br>PHYSA | 0          | 0   | -        | ۲             |
|  | ALL GASTROPODA      |            |     |          | 7             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | RAB COUNT        | DATA |      |             |     | 5/ 5/83                                 |
|---------------------------------------|------------------|------|------|-------------|-----|---|
| TRANSECT 5 STATION 2 (CONT'D)         | CONT'D)          |      |      |             |     |   |
|                                       |                  |      | GRAB | GRAB COUNTS | S   | ESTIMATED                               |
| AXON                                  |                  |      | -    | 1 2 3       | (5) | NO./SQ. METER                           |
| PELECYPODA                            | !<br>!<br>!<br>! | <br> | 1    | ;<br>;<br>; | -   | 1 |
| SPHAERIIDAE                           |                  |      |      |             |     |   |
| PISIDION                              |                  |      | 0    | o           | c   | 3.6                                     |
|                                       |                  |      | )    | ,           | ,   |   |
| ALL PELECYPODA                        |                  |      |      |             |     | 21                                      |

| MACKUSUUBENITUS PUNAK GRAB CUUNI DAIA     |            |          |          | 5/ 2/83       |
|---|------------|----------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 5 STATION 3      | 9400       | į        | <u>.</u> |               |
| TAXON                                     | -          | 4 2 3    | n m      | NO./SQ. METER |
| FISH<br>ETHEOSTOMA CAERULEUM              | ٥          | ٥        | -        |               |
| FISH EGGS                                 | 0          | 0        | 8        |               |
| ALL FISH                                  |            |          |          | 21            |
| CNIDARIA                                  | •          | Ų        | ç        | C             |
| E + 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 | ס          | <u> </u> | 3        | 707           |
| ALL CNIDARIA                              |            |          |          | 282           |
| RHABDOCOELA                               | -          | 0        | 0        | 7             |
| NEMATODA                                  | 8          | -        | 8        | 9.            |
| OLIGOCHAETA<br>Nais                       | 0          | 0        | 4        |               |
| SPIROSPERMA                               | 0          | 0        | -        |               |
| OTHER<br>ALL DLIGOCHAETA                  | 56         | 53       | 65       | 1026          |
| CLADOCERA BOSMINA                         | 0          | -        | 0        |               |
| DAPHNIA                                   | -          | 0        | ო        |               |
| ALL CLADDCERA                             |            |          |          | 34            |
| COPEPODA<br>CYCLOPS BICUSPIDATUS          | 0          | 0        | 8        |               |
| DIAPTOMUS                                 | <b>6</b> 0 | o        | 9        |               |
| LIMMOCALANUS                              | 0          | -        | -        |               |
| ALL COPEPODA                              |            |          |          | 186           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA          |           |             |          | 5/ 5/83                    |
|--|-----------|-------------|----------|----------------------------|
| TRANSECT 5 STATION 3 (CONT'D)                  |           |             |          |                            |
| TAXON  | GRAE<br>- | GRAB COUNTS | NTS<br>B | ESTIMATED<br>NO./SQ. METER |
| 4  | -         | 0           | ٥        | 7                          |
| ALL AMPHIPODA                                  |           |             |          | ٢                          |
| DIPTERA  |           |             |          |                            |
| CHIRONOMIDAE<br>Empididae                      | 4 4       | ~ 0         | 261      | 1660                       |
| ALL DIPTERA                                    | 1         | >           | >        | 1687                       |
| EPHEMEROPTERA<br>EPHEMERELLIDAE<br>EPHEMERELLA | 8         | 0           | ហ        |                            |
| ALL EPHEMEROPTERA                              |           |             |          | 87                         |
| TRICHOPTERA<br>Hydropsychidae<br>Hydropsyche   | 0         | 0           | ø        |                            |
| LEPTOCERIDAE<br>CERACLEA                       | 0         | 0           | -        |                            |
| ALL TRICHOPTERA                                |           |             |          | <b>4</b>                   |
| PLECOPTERA                                     | 0         | 0           | -        |                            |
| ACARINA  | -         | 0           | 8        | 2                          |
| GASTROPODA<br>Amnicola                         | 0         | -           | 0        |                            |
| ALL GASTROPODA                                 |           |             |          | ^                          |

| ST. CLAIR RIVER          | TRANSECT 6 ST | 6 STATION 1 | GR.  | GRAB COUNTS | NTS | ESTIMATED     |
|--------------------------|---------------|-------------|------|-------------|-----|---------------|
| TAXON                    |               | 3           | - !  | 2           | 6   | NO./50. METER |
| CNIDARIA                 |               |             | 1109 | 838         | 428 | 16356         |
| ALL CNIDARIA             |               |             |      |             |     | 16356         |
| RHABDOCOELA              |               |             | 8    | 6           | ý   | 92            |
| TRICLADIDA               |               |             | 23   | 30          | 7   | 413           |
| NEMERTINEA               |               |             | 0    | -           | 0   | 7             |
| NEMATODA                 |               |             | 86   | 6           | =   | 943           |
| OL IGOCHAETA<br>Nais     |               |             | 4    | 0           | က   |               |
| SPIROSPERMA              |               |             | 12   | 25          | 9   |               |
| OTHER<br>ALL OLIGOCHAETA |               |             | 374  | 166         | 192 | 5620          |
| CLADOCERA<br>DAPHNIA     |               |             | 0    | 7           | 7   |               |
| DAPHNIA AMBIGUA          |               |             | -    | 0           | 0   |               |
| ILYOCRYPTUS              |               |             | σ    | ၉           | -   |               |
| ALL CLADOCERA            |               |             |      |             |     | 124           |

7

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |          |             |       | 5/ 5/83       |
|--|----------|-------------|-------|---------------|
| TRANSECT 6 STATION 1 (CONT'D)              | ď        | SPAR COUNTS | STNI  | FSTIMATED     |
| TAXON                                      | -        | 5           | 6     | NO./SQ. METER |
| COPEDODA                                   | c        | ~           | C     |               |
|  | •        | ,           | ,     |               |
| CYCLOPS BICUSPIDATUS                       | 7        | 0           | 0     |               |
| DIAPTOMUS                                  | 11       | 2           | 11    |               |
| HARPACTICOIDA                              | 27       | ħ           | •     |               |
| LIMMOCALANUS                               | -        | ED.         | -     |               |
| ALL COPEPODA                               |          |             |       | 826           |
| OSTRACODA                                  | 0        | 0           | 8     | 14            |
| AMPHIPODA                                  |          |             |       |               |
| GAMMARUS                                   | <b>2</b> | 129         | 61    |               |
| _  | 0        | 6           | 0     |               |
| PONTOPOREIA HOYI                           | -        | 0           | 0     |               |
| ALL AMPHIPODA                              |          |             |       | 2080          |
| ISOPODA                                    |          |             |       |               |
| ASELLUS                                    | -        | 6           | 0     | 28            |
| ALL ISOPODA                                |          |             |       | 28            |
| TERRESTRIAL INSECT                         | -        | 0           | 0     | 7             |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE | 437      | 118         | 1 879 | 14007         |
| EMPIDIDAE<br>ALL DIPTERA                   | -        | 0           | 0     | 14056         |

| TRANSECT 6 STATION 1 (CONT'D)               |              | TMICS   |          | CETTMATED     |
|---|--------------|---------|----------|---------------|
| TAXON                                       | - CAND       | 1 2 3   | 1        | NO./SQ. METER |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS         | -            | y       | 0        |               |
| EPHEMERIDAE<br>HEXAGENIA                    | 4            | ø       | -        |               |
| ALL EPHEMEROPTERA                           |              |         |          | 124           |
| COLEOPTERA ELMIDAE DUBIRAPHIAALL COLEOPTERA | <del>-</del> | 0       | 0        | <b>,</b>      |
| TRICHOPTERA                                 |              |         |          |               |
| LEPTOCERIDAE<br>CERACLEA                    | -            | ~       | 0        |               |
| MYSTACIDES                                  | 0            | -       | -        |               |
| NECTOPSYCHE                                 | -            | 0       | 0        |               |
| OECETIS                                     | o            | 35 1    | 13       |               |
| SETODES                                     | 0            | 0       | -        |               |
| POLYCENTROPODIDAE<br>POLYCENTROPUS          | -            | 0       | 0        |               |
| ALL INTUMPIENA<br>ACARINA                   | ٥            | 0       | -        |               |
| GASTROPODA<br>Amnicola                      | 22           | 56<br>8 | 82       |               |
| ELIMIA LIVESCENS                            | ဖ            | 32 1    | <u>.</u> |               |
| GYRAULUS                                    | 13           | 4       | ∞        |               |
| PHYSA                                       | 4            | y       | 7        |               |
| VALVATA TRICARINATA                         | 8            | 9       | -        |               |
|   |              |         |          |               |

1970

5/ 5/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

B-47

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |                | 5/ 5/83       |
|---------------------------------------|------|-------------|----------------|---------------|
| TRANSECT 6 STATION 1 (CONT'D)         | GRAE | GRAB COUNTS | NTS            | ESTIMATED     |
|                                       | -    | 2 3         | ю              | NO./SQ. METER |
| PELECYPODA                            |      |             |                |               |
| SPHAERIIDAE                           |      |             |                |               |
| PISIDION                              | 9    | 23          | <del>1</del> 3 |               |
|                                       |      |             |                | •             |
| SPHAERIUM                             | 0    | 4           | -              |               |
|                                       |      |             |                |               |
| ALL SPHAERIIDAE                       |      |             |                | 324           |
| ALL PELECYPODA                        |      |             |                | 324           |

| MACKULOUDENINGS PUNAN GRAD COUNT DATA          |         |                |      |               |
|--|---------|----------------|------|---------------|
| ST. CLAIR RIVER TRANSECT 6 STATION             | 6       | AB CO          | STNO | ESTIMATED     |
| TAXON  | -       | 1 2 3          | 6    | NO./SQ. METER |
| FISH   |         |                |      |               |
| COTTUS BAIRDII                                 | 0       | 0              | -    |               |
| FISH EGGS                                      | 6       | 0              | 0    |               |
| 1 1 1 1 1                                      |         |                |      |               |
| ALL FISH                                       |         |                |      | 69            |
| CNIDARIA                                       |         |                |      |               |
| HYDRA  | 2276    | 2276 3303 2754 | 2754 | 57387         |
| ALL CNIDARIA                                   |         |                |      | 57387         |
| RHABDOCOELA                                    | 58      | 17             | 26   | 902           |
| NEMERTINEA                                     | -       | 0              | -    | 7             |
| NEMATODA                                       | 45<br>4 | in<br>in       | 3.   | 964           |
| HIRUDINEA<br>PISCICOLIDAE<br>PISCICOLA MILNERI | 0       | 0              | -    |               |
| ALL HIRUDINEA                                  |         |                |      | ,             |
| OLIGOCHAETA                                    |         |                |      |               |
| NAIS   | 32      | 22             | 95   |               |
| SPIROSPERMA                                    | 4       | 56             | 50   |               |
|  | 808     | 706            | 536  |               |
| ALL OLIGOCHAETA                                |         |                |      | 15343         |
| POLYCHAETA                                     | c       | c              | c    | 44            |
| MANAYUMAIA SPECIOSA                            |         |                |      | :             |
| ALL POLYCHAETA                                 |         |                |      | =             |

| TRANSECT 6 STATION 2 (CONT'D)  GRAB COUNTS  ESTIMATED  DAPHNIA  | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |          |           | 5/ 5/83  |
|--|---|------------|----------|-----------|--|
| GALEATA MENDOTAE  GALEATA MENDOTAE  O 1 0  O 0 1  O 0 1  O 0 1  O 1 0  O 0 1  O | φ                                       | (          | į        |           |  |
| A AZTECA  A AZTECA  A AZTECA  B 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0  | TAXON                                   | ğ -        | AB CO    | STAL<br>3 | ESTIMATED<br>NO./SQ. METER   |
| BICUSPIDATUS  OCERA BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  O 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0   | CLADOCERA                               | c          | -        |           | ;<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| OCERA BICUSPIDATUS  OCERA BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  OCERA  BICUSPIDATUS  OCERA  OCERA  BICUSPIDATUS  OCERA  OCER |   | •          | •        | •         |  |
| BICUSPIDATUS  BICUSPIDATUS  BICUSPIDATUS  BICUSPIDATUS  COERA  BICUSPIDATUS  BICUSPIDATUS  COERA  BICUSPIDATUS  COERA  CANUS  COERA  CANUS  COERA  CO | DAPHNIA                                 | 0          | 0        | -         |  |
| PULEX OCERA  | GALEATA                                 | 0          | -        | 0         |  |
| BICUSPIDATUS  BICUSPIDATUS  0 18 24  17 29 16  1C01DA  LANUS  17 29 16  17 29 16  18 24  10 2 0  20 2  20 2 0  | PULEX                                   | 0          | 8        | 0         |  |
| BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  ICOIDA  LANUS  LOPS  LOPS  LOPS  LOPS  A AZTECA  A AZTECA  TREIA HOVI  IPODA  I | 1 | (          | ;        | •         |  |
| BICUSPIDATUS  BICUSPIDATUS  17 29 16  10010A  10010A  100 24  LANUS  LOPS  LOP | 1CTOCKTP105                             | <b>3</b> 0 | 4        | On C      |  |
| BICUSPIDATUS  0 18 24  10 10 24  10 10 24  10 10 24  10 10 24  10 10 2  10 10 2  10 10 2  10 10 2  10 10 2  10 10 2  10 10 2  10 10 2  | ALL CLADOCERA                           | ,          |          |           | 255  |
| BICUSPIDATUS 0 18 24  US   | COPEPODA                                |            |          |           |  |
| 17 29 16 1C01DA 1C01DA 17 29 16 1C01DA 1 100 24  | CYCLOPS BICUSPIDATUS                    | 0          | <b>6</b> | 74        |  |
| COTDA   81 100 24  | DIAPTOMUS                               | 17         | 59       | 16        |  |
| COLDA  |   |            |          |           |  |
| LOPS  LOPS  LOPS  LOPS  LOPS  PODA  A AZTECA  A AZTECA  REIA HOVI  IPODA  1 0 2  | HARPACTICOIDA                           | <b>6</b>   | 8        | 24        |  |
| PODA  PODA  REIA HOVI  IPODA  1 0 2  0 2 0  2 10  1 1 1  1 0 2   | LIMMOCALANUS                            | 6          | 0        | 60        |  |
| PODA  8 2 10  8 2 10  8 2 10  8 2 10  8 2 10  1 0 2  | PARACYCLOPS                             | 0          | 8        | 0         |  |
| S 2 10<br>A AZTECA 4 1 8<br>2 1 1<br>IPODA 1 0 2   | ALL COPEPODA                            |            |          |           | 2238   |
| DA STECA   | DSTRACODA                               | •          | 8        | 5         | 138  |
| LLA AZTECA  LLA AZTECA  LLA AZTECA  POREIA HOVI  PHIPODA  US  1 0 2  | CAMMARIE                                | ž          | ?        | *         |  |
| LLA AZTECA   |   | 3          | į        | ?         |  |
| POREIA HOVI PHIPODA  1 0 2   | H.ALELLA AZTECA                         | •          | -        | •         |  |
| PHIPODA<br>US<br>1 0 2   | PONTOPOREIA HOYI                        | 8          | -        | -         |  |
| 1 0 2  | _                                       |            |          |           | 116  |
|  | 1SOPODA<br>ASELLUS                      | -          | 0        | 84        | 21   |
|  |   |            |          |           | į  |

| TAXON                               | GR - | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER | red<br>Meter |
|-------------------------------------|------|-------------|-----------|----------------------------|--------------|
| TERRESTRIAL INSECT                  | 0    | 0           | -         | 7                          |              |
| DIPTERA<br>CERATOPOGONIDAE          | ٥    | 0           | ~         |                            |              |
| CHIRONOMIDAE                        | 469  | 4 15        | 817       | 11714                      |              |
| ALL DIPTERA                         | -    | 0           | 0         | 11735                      |              |
| EPHEMEROPTERA<br>Caenidae           |      |             |           |                            |              |
| CAENIS                              | ø    | -           | on        |                            |              |
| EPHEMERIDAE<br>Hexagenja            | 99   | ξ           | ý         |                            |              |
|                                     | 3    | 2           | 9         |                            |              |
| EPHEMERELLIDAE<br>EPHEMERELLA       | m    | -           | <b>Q</b>  |                            |              |
| HEPTAGENIDAE                        |      |             |           |                            |              |
| STENONEMA                           | 0    | 0           | -         |                            |              |
| ALL EPHEMEROPTERA                   |      |             |           | 1005                       |              |
| COLEOPTERA<br>ELMIOAE<br>DUBIRAPHIA | -    | o           | en.       |                            |              |
| ALL COLEOPTERA                      |      | ,           | ı         | 28                         |              |

|                                     |          |             |          | 59/6 /6                    |
|-------------------------------------|----------|-------------|----------|----------------------------|
| TRANSECT 6 STATION 2 (CONT'D) TAXON | GRA      | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| TRICHOPTERA BRACHYCENTRIDAE         | <br>     |             |          | <br>                       |
| BRACHYCENTRUS                       | 0        | ស           | -        |                            |
| HYDROPSYCHIDAE                      | c        | c           | -        |                            |
|                                     | •        | •           | •        |                            |
| HYDROPSYCHE                         | 0        | 0           | -        |                            |
| LEPTOCERIDAE                        | •        | ď           | r        |                            |
| CERACLEA                            | ,        | י           | ٧        |                            |
| MYSTACIDES                          | 0        | 0           | -        |                            |
| OECETIS                             | 0        | -           | -        |                            |
|                                     | c        | -           | -        |                            |
|                                     | •        |             |          |                            |
| POLYCENTROPODIDAE<br>NEURECLIPSIS   | <b>-</b> | 8           | ო        |                            |
| ALL TRICHOPTERA                     | ٠        |             |          | 200                        |
| ACARINA                             | 8        | 0           | -        | 21                         |
| GASTROPODA                          | •        | U           |          |                            |
| AMNICOLA                            | •        | n           | 0        |                            |
| ELIMIA LIVESCENS                    | -        | -           | 5        |                            |
| GYRAULUS                            | 0        | 0           | 6        |                            |
| PHYSA                               | •        | ĸ           | 21       |                            |
| ALL GASTROPODA                      |          |             |          | 510                        |
| PELECYPODA<br>Sphaeriidae           | ,        | •           | !        |                            |
| PISIDIUM                            | 4        | m           | 5        | 117                        |
| ALL PELECYPODA                      |          |             |          | 117                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |              |             |          | 5/ 5/83                    |
|--|--------------|-------------|----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 6 STATION 3 TAXON | GRAE<br>1    | GRAB COUNTS | ZTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                          | 24           | 0           | 4        | 241                        |
| ALL CNIDARIA                               |              |             |          | 241                        |
| RHABDOCOELA                                | <del>-</del> | ō           | 0        | 234                        |
| NEMATODA                                   | 34           | 83          | 89       | 1274                       |
| OLIGOCHAETA<br>Spirosperma ferox           | 62           | 46          | 48       |                            |
| OTHER<br>ALL OLIGOCHAETA                   | 0            | 46          | 99       | 2045                       |
| POLYCHAETA MANAYUNKIA SPECIOSA             | 0            | 0           | ~        | , r                        |
| CLADOCERA<br>BOSMINA                       | ٥            | 0           | -        |                            |
| DAPHNIA                                    | 0            | -           | 0        |                            |
| DAPHNIA AMBIGUA                            | 0            | -           | 0        |                            |
| ALL CLADOCERA                              |              |             |          | <b>.</b>                   |
| COPEPODA<br>CYCLOPOIDIDAE                  | •            | g           | 0        |                            |
| DIAPTOMUS                                  | 6            | 34          | <b>o</b> |                            |
| HARPACTICOIDA                              | -            | 0           | 0        |                            |
| LIMMOCALANUS                               | 6            | 0           | ო        |                            |
| ALL COPEPODA                               |              |             |          | 406                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                                  |          |             |          | 5/ 5/83                    |
|--|----------|-------------|----------|----------------------------|
| TRANSECT 6 STATION 3 (CONT'D)  |          |             |          |                            |
|  | g -      | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| AMPHI PODA<br>GAMMARUS   | =        | ٥           |          | <br>                       |
| PONTOPOREIA HOYI   | 0        | 0           | -        |                            |
| ALL AMPHIPODA  |          |             |          | 103                        |
| TERRESTRIAL INSECT   | -        | 0           | 0        | 7                          |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALL DIPTERA | 327<br>8 | 0 683       | 004      | 3719<br>3822               |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA                              | 9        | 0           | 8        |                            |
| EPHEMEREL I DAE<br>EPHEMEREL LA  | -        | 0           | 0        |                            |
| ALL EPHEMEROPTERA  |          |             |          | 131                        |
| COLEOPTERA ELMIDAE DUBIRAPHIA  | -        | -           | -        | 2                          |
| TRICHOPTERA<br>LZPTOCERIOAE<br>MYSTACIDES                              | 0        | 0           | -        | ·                          |
| OECETIS  | 0        | 0           | •7       |                            |
| TRIAENDDES   | 0        | 0           | -        |                            |
| ALL TRICHOPTERA  |          |             |          | 21                         |
|  |          |             |          |                            |

| MACKUZUUBENIHUS PUNAK GRAB CUUNI DATA |            |             |            | 5/ 5/83       |
|---------------------------------------|------------|-------------|------------|---------------|
| TRANSECT 6 STATION 3 (CONT.D)         |            |             |            |               |
|                                       | GRAB       | GRAB COUNTS | TS         | ESTIMATED     |
| TAXON                                 | -          | 8           | 6          | NO./SQ. METER |
|                                       | 0          | 0           | 6          | 21            |
| GASTROPODA                            |            |             |            |               |
| AMNICOLA                              | <b>4</b> 8 | 7           | <b>L</b> O |               |
| ****                                  |            |             |            |               |
|                                       | ĸ          | 0           | ĸ          |               |
|                                       |            |             |            |               |
| GYRAULUS                              | 77         | 0           | 0          |               |
| 105911                                |            |             |            |               |
| PHYSA                                 | •          | 0           | 0          |               |
|                                       | •          | ,           | •          |               |
| SUMATUGY KUS SUBGLUBUSUS              | -          | <b>5</b>    | )          |               |
| VALVATA TRICARINATA                   | •          | -           | o          |               |
|                                       | •          |             | •          |               |
| ALL GASTROPODA                        |            |             |            | 647           |
| PELECYPODA                            |            |             |            |               |
| SPHAERIIDAE                           |            |             |            |               |
| PISIDIUM                              | 24         | <b>o</b>    | 8          |               |
|                                       |            |             |            |               |
| SPHAERIUM                             | ₩          | <b>m</b>    | е          |               |
| 1 1 1 1 6 5 0                         |            |             |            |               |
| ALL SPHAERIIDAE                       |            |             |            | 448           |
| AT DELECYBODA                         |            |             |            | 448           |

| ST. CLAIR RIVER TRANSECT 7 STATION | -              | GRAB COUNTS  | UNTS     | ESTIMATED | 0     |
|------------------------------------|----------------|--------------|----------|-----------|-------|
| TAXON                              | -              | 2            | e ;      | MO./50.   | METER |
| CNIDARIA<br>HYDRA                  | 2217 1614 3411 | 1614         | 3411     | 49873     |       |
| ALL CNIDARIA                       |                |              |          | 49873     |       |
| RHABDOCDELA                        | 76             | <del>.</del> | 63       | 1047      |       |
| TRICLADIDA                         | 0              | 16           | 0        | 1 10      |       |
| NEMERTINEA                         | 0              | 0            | 0        | 21        |       |
| NEMATODA                           | 24             | \$           | 38       | 1143      |       |
| OLIGOCHAETA<br>Nais                | a              | •            | •        |           |       |
| SPIROSPERMA                        | 9              | 46           | <b>8</b> |           |       |
| OTHER<br>ALL OLIGOCHAETA           | 405            | 287          | 489      | 9166      |       |
| CLADOCERA<br>BOSMINA               | -              | 0            | 0        |           |       |
| DAPINIA                            | 8              | 0            | •        |           |       |
|                                    | 8              | ٥            | 0        |           |       |
| DAPHNIA SCHODLERI                  | -              | •            | 0        |           |       |
| ILYOCRYPTUS                        | e              | 0            | -        |           |       |
| 3642:0321:0                        |                |              |          |           |       |

| 4 2 3 3 |          | NO./SQ. METER | E T  |
|---------|----------|---------------|--|
| 0       | 6        |               |  |
| >       | י        |               |  |
| ,       |          |               |  |
| ίŪ      | 5        |               |  |
|         | ı        |               |  |
| 7       | ^        |               |  |
| 0       | 0        |               |  |
| 0       | 0        |               |  |
| ,       | 1        |               |  |
|         |          | 833           |  |
| 0       | •        | 62            |  |
|         |          |               |  |
| 113     | 254      |               |  |
| c       | :        |               |  |
| ٧       | <u>:</u> |               |  |
| 0       | 0        |               |  |
|         |          |               |  |
|         |          | 3347          |  |
|         | :        | ;             |  |
| -       | Ş        | 2             |  |
|         |          | 76            |  |
|         | •        |               |  |
|         | 1221     | 15419         |  |
|         |          | 15454         |  |
|         |          | 25            | 61<br>7<br>0<br>14<br>10<br>10<br>10<br>1221 |

.

| 7 | ١ | ֡ |
|---|---|---|
| • |   | • |
| • |   | ļ |
|   |   | ١ |
| L |   |   |
|   |   | ֡ |
| • | į | ì |
| 2 |   | ŝ |
| • |   | ! |
| • |   | ì |
| _ |   |   |
|   | į |   |
| 9 | ļ | ļ |
| 5 | ١ | 5 |
| ζ | 3 | , |
|   |   |   |
|   | 1 |   |
| • | į | ľ |
| 2 |   | 2 |
| Č | Ĭ | 1 |
| Č | ١ | Ĺ |
| - |   |   |
| ŧ | , |   |
| ( |   | 2 |
| 3 | ١ | _ |
| 5 |   |   |
| 2 |   |   |
|   |   |   |

|   | GRAB                  | GRAB COUNTS | ZTS              | ESTIMATED                                      |
|---|-----------------------|-------------|------------------|--|
|   | -                     | ~           | 60               | NO./SO. METER                                  |
| EPHEMEROPTERA                                   | 1<br>1<br>1<br>1<br>1 | !<br>!<br>! | f<br>6<br>8<br>8 | !<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>! |
| CAENIDAE  |                       |             |                  |  |
| CAENIS  | <b>4</b> 6            | 21          | 5                |  |
|   |                       |             |                  |  |
| EPHEMERIDAE                                     | ,                     | •           | :                |  |
| TEXAGENIA                                       | ~                     | 7           | 75               |  |
|   |                       |             |                  |  |
| EPHEMERELLIDAE                                  |                       |             |                  |  |
| EPHEMERELLA                                     | a                     | 7           | N                |  |
|   |                       |             |                  |  |
| ALL EPHEMEROPTERA                               |                       |             |                  | 1226   |
| TETCHOPTERA                                     |                       |             |                  |  |
| BRACHYCENTRIDAE                                 |                       |             |                  |  |
| BRACHYCENTRUS                                   | 13                    | ^           | ^                |  |
|   |                       |             |                  |  |
| HYDROPSYCHIDAE                                  |                       |             |                  |  |
| CHEUMATOPSYCHE                                  | ო                     | -           | -                |  |
| * 1 * 5 * 7 * 8 * 8 * 8 * 8 * 8 * 8 * 8 * 8 * 8 |                       |             |                  |  |
| HYDROPSYCHE                                     | ~                     | -           | -                |  |
|   |                       |             |                  |  |
| LEPTOCERIDAE                                    |                       |             |                  |  |
| CERACLEA  | ~                     | -           | ~                |  |
|   |                       |             |                  |  |
| NECTOPSYCHE                                     | 0                     | 0           | -                |  |
| * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1         |                       |             |                  |  |
| OECETIS   | ₹                     | 0           | 0                |  |
|   |                       |             |                  |  |
| SETODES   | -                     | 0           | 0                |  |
|   |                       |             |                  |  |
| TRIAENODES                                      | -                     | 0           | 0                |  |
|   |                       |             |                  | •  |
| LIMNEPHILIDAE                                   | 1                     | (           |                  |  |
| PYCNOPSYCHE                                     | 0                     | 0           | -                |  |
|   |                       |             |                  |  |
| POLYCENIKOPODIDAE                               | -                     | c           | c                |  |
| MECKET 1010                                     | -                     | •           | •                |  |
| ALL TRICHOPTERA                                 |                       |             |                  | 434  |
|   |                       |             |                  |  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA         |                       |             |             | 5/ 5/83                                 |
|---|-----------------------|-------------|-------------|---|
| TRANSECT 7 STATION 1 (CONT'D)                 | ļ                     |             |             |   |
| TAXON   | - GR                  | 8<br>8<br>8 | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER              |
| GASTROPODA                                    | }<br>{<br>!<br>!<br>! |             | 1           | 1 |
| AMNICOLA                                      | 58                    | 41          | 228         |   |
| ELIMIA LIVESCENS                              | 39                    | 12          | 38          |   |
| 1 - 1 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 |                       |             |             |   |
| GYRAULUS                                      | 2                     | 5           | 23          |   |
| PHYSA   | 2                     | Ø           | <b>5</b> 6  |   |
| \$ 1 P P                                      |                       |             |             |   |
| VALVAIA IRICARINAIA                           | -                     | 0           | 0           |   |
|   |                       |             |             | 3712                                    |
| PELECYPODA                                    |                       |             |             |   |
| SPHAERIDAE                                    |                       |             |             |   |
| PISIDIUM                                      | 62                    | 58          | 97          |   |
| SPHAERIUM                                     | -                     | -           | -           |   |
| * 1 * 7 * 1 * 1 *                             |                       |             |             |   |
| ALL SPHAERIDAE                                |                       |             |             | 1315                                    |
| ALL PELECYPUDA                                |                       |             |             | 1315                                    |
|   |                       |             |             |   |

| MACROZDOBENTHOS PONAR GRAB COUNT DATA | ATI       |             |      | 5/ 5/83       |
|---------------------------------------|-----------|-------------|------|---------------|
| IR RIVER TRANSECT 7                   | STATION 2 | GRAB COUNTS | UNTS |               |
| TAXON                                 | -         | 7           | က    | 40./SQ. METER |
| CNIDARIA<br>Hydra                     | 1515      | 1515 1492   | 233  | 22313         |
| ALL CNIDARIA                          |           |             |      | 22313         |
| RHABDOCOELA                           | 13        | 23          | ĸ    | 282           |
| NEMERTINEA                            | 27        | 0           | -    | 193           |
| NEMATODA                              | 225       | 49          | 78   | 2424          |
| OLIGOCHAETA<br>Nais                   | <b>6</b>  | 21          | ທ    |               |
| SPIROSPERMA                           | 01        | 5           | in.  |               |
| OTHER.<br>ALL DLIGOCHAETA             | 203       | 261         | 23   | 4559          |
| CLADOCERA<br>Daphnia Pulex            | 0         | п           | 0    |               |
| DAPHNIA SCHODLERI                     | ٥         | -           | 0    |               |
| , 8                                   |           |             |      | 21            |
| COPEPODA<br>CYCLOPS BICUSPIDATUS      | 0         | 9           | 0    |               |
| DIAPTOMUS                             | •         | 12          | 0    |               |
| HARPACTICOIDA                         | 0         | 8           | •    |               |
| LIMNOCALANUS                          | e         | -           | 0    |               |
| ALL COPEPODA                          |           |             |      | 220           |

| DECAPODA  ASTACIDAE  ALL DECAPODA  ASTACIDAE  ALL DECAPODA  AMPHIPODA  AMPHIPODA  AMPHIPODA  AMPHIPODA  ALL AMPHIPODA  CAMBONOMIDAE  CHEMERROPTERA  CHEMERRO | TRANSECT 7 STATION 2 (CONT'D)                       | •    | !   |            |               |
|--|---|------|-----|------------|---------------|
| DAE APODA A A A A A A A A A A A A A A A A A A  | 2   | - 68 | 200 | S 60       | NO./SQ. METER |
| FODA  S AZTECA  A AZTECA  A AZTECA  3 0 3  1PODA  ILDAE  ERA  TERA  TERA  TITIDAE  T | DAE   | -    | 0   | 0          | 7             |
| S  | ALL DECAPODA  |      |     |            | 7             |
| S AZTECA 3 0 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | OSTRACODA   | 0    | -   | 0          | 7             |
| 3 0 3 3 43 267 39 4 4 5 18 12 9 11 4 26 1 9 1  | AMPHIPODA<br>CAMMADIS                               | 78   | 64  | 3.         |               |
| 343 267 39 4<br>343 267 39 4<br>0 2 5 4<br>7 5 18<br>13 12 9<br>11 0 1   | HYALELLA AZTECA                                     | m    | 0   | e          |               |
| 343 267 39 44<br>0 2 5 4<br>7 5 18<br>13 12 9<br>11 0 1  | ALL AMPHIPODA                                       |      |     |            | 985           |
| DWIDAE  DAE  DAE  PTERA  OPTERA  OPTERA  ENIDAE  ENILLA  ENILLA  ENILLA  FERLLA  T 5 18  T 7 5 18  T 8 12 9  T 8 12 9  T 8 12 9  T 9 12 9  T 9 12 9  T 1 0 1   | TERRESTRIAL INSECT                                  | 0    | -   | 6          | 28            |
| 7 5 18<br>13 12 9<br>AE<br>11 4 26<br>1 0 1  | DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALI DIPTEDA | 343  | 267 | <b>6</b> R | 4469<br>4518  |
| 13 12 9 11 4 26 11 0 1   | CAENIDAE CAENIS                                     | -    | ស   | <b>6</b>   |               |
| 11 4 26<br>1 0 1   | EPHEMERIDAE<br>HEXAGENIA                            | 5    | 2   | O          |               |
| •  | EPHEMERELLIDAE<br>EPHEMERELLA                       | =    | •   | <b>5</b>   |               |
|  | HEPTAGENI I DAE<br>STENDNEMA                        | -    | 0   | -          |               |
| EROPTERA   | ALL EPHEMEROPTERA                                   |      |     |            | 131           |

(

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |          |             | 5/ 5/83                                 |
|---|----------|-------------|---|
| TRANSECT 7 STATION 2 (CONT'D)                   |          |             |   |
|   |          | GRAB COUNTS | . OZ                                    |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | 0        | 4 7         | , a , a , a , a , a , a , a , a , a , a |
| HYDROPSYCHIDAE<br>CHEUMA TOPSYCHE               | •        | 17 9        |   |
| HVDROPSYCHE                                     | ın       | <b>6</b> 0  |   |
| HYDROPTILIDAE<br>HYDROPTILA                     | 0        | •           |   |
| LEPTOCERIDAE<br>Ceraclea                        | 00       | 9           |   |
| MYSTACIDES                                      | 0        | •           |   |
| DECETIS   | •        | 0           |   |
| TRIAENODES                                      | 8        | ٥           |   |
| POLYCENTROPODIDAE<br>NEURECLIPSIS               | m        | 7 11        |   |
| ALL TRICHOPTERA                                 |          |             | 702                                     |
| PLECOPTERA PERLOGIDAE                           | ٥        | •           | r r                                     |
| ACARINA   | ~        | <b>₽</b>    | 10<br>10                                |
| GASTROPODA<br>AMULCOLA                          | <b>.</b> | ž.<br>8     |   |
| בּוֹ  | 87       | 65 32       |   |
| GYRAULUS  | 0        | •           |   |
| 4   | -        | •           |   |
| ALL GASTROPODA                                  |          |             | 1577                                    |

| MACKUZUUDENIMUS PUMAK EKAB LUUMI DAIA   |               |             |          | 59 /0 /0      |
|---|---------------|-------------|----------|---------------|
| TRANSECT 7 STATION 2 (CONT'D)           | 2 <b>V</b> Q2 | SPAR CRIMTS |          | FSTIMATED     |
| TAXON                                   | -             | 1 2 3       | 3<br>NO. | NO./SQ. METER |
| PELECYPODA                              |               |             |          |               |
| SPHAERIIDAE                             |               |             |          |               |
| PISIDION                                | 9             | Ë           | y        |               |
| ) E E E E E E E E E E E E E E E E E E E |               |             |          |               |
| SPHAERIUM                               | 7             | 5           | •        |               |
|   |               |             |          |               |
| ALL SPHAERIIDAE                         |               |             |          | 496           |
| 460000000000000000000000000000000000000 |               |             |          | 706           |

|   |       |              |     | 20 10         |
|---|-------|--------------|-----|---------------|
| ST. CLAIR RIVER TRANSECT 7 STATION 3    | 2D A6 | STAIN COMMIS | ATA | FCTIMATED     |
| TAXON                                   | -     | 6            |     | NO./SQ. METER |
| <br>                                    |       |              |     |               |
| FISH EGGS                               | -     | 0            | 0   | 7             |
| ALL FISH                                |       |              |     | 1             |
| CNIDARIA                                |       | •            | ,   |               |
| HYORA                                   | 7     | 7            | 7   | 213           |
| ALL CNIDARIA                            |       |              |     | 213           |
| RHABDOCOELA                             | 0     | 0            | 7   | 96            |
| NEMERTINEA                              | =     | 7            | 0   | 124           |
| NEMATODA                                | 624   | 267          | 230 | 7720          |
| OL IGOCHAETA<br>NATS                    | c     | •            | -   |               |
| )                                       | •     | •            | •   |               |
| SPIROSPERMA                             | _     | 0            | 0   |               |
| OTHER                                   | 28    | 9            | 32  |               |
| ALL OLIGOCHAETA                         |       |              |     | 230           |
| CLADOCERA                               |       |              |     |               |
| DAPHNIA                                 | m     | 0            | 0   | 5             |
| ALL CLADOCERA                           |       |              |     | 21            |
| COPEPUDA                                |       |              |     |               |
| DIAPTOMUS                               | 0     | 7            | ស   |               |
| 1 THANDER ARIS                          | 0     | -            | 4   |               |
| 111111111111111111111111111111111111111 | •     | •            |     |               |
| ALL COPEPODA                            |       |              |     | 165           |

| T 7 STATION 3 (CONT'D)  GRAB COUNTS  1 2 3  DA  DA  DA  DA  DA  DA  DA  DA  DA  D  |   |     |      |     |               |
|--|---|-----|------|-----|---------------|
| DA STECA 1 2 3 0 0 1 2 3 10 0 1 2 1 0 1 0 1 1 0  | TRANSECT 7 STATION 3 (CONT'D)   | 8   | 2    | 7   | CETTMATER     |
| DA  BA  RUS  RUS  RUS  RUS  RUS  RUS  RUS  RU  |   | š – | \$ ~ | 20  | NO./SQ. METER |
| S  |   | 6   | 0    | ٥   | 21            |
| HIA AZTECA  1 0 7  HIA AZTECA  1 0 7  HIPODA  RIAL INSECT  1 0 0  HIAL INSECT  1 0 0  1 2  DAERA  ONIDAE  ENIA  FELLIDAE  ENIA  FELLIDAE  CIDAE  CIDAE  CIDAE  CONIDAE  CONIDA | AMPHI PODA  | 9   | •    | •   |               |
| LLA AZTECA  LLA AZTECA  PHIPODA  RIAL INSECT  1 0 0  DAE  DAE  DAE  DATERA  BY  SHIDAE  ENELLIDAE  ENELLA  CIDAE  CIDAE  HEMEROPTERA  1 0 0  1 2  1 0  1 2  1 0  1 2  1 0  1 2  1 0  1 0   | - THE THE TENT OF | 12  | o    | 0   |               |
| PHIPODA  RIAL INSECT  1 0 0  MIDAE  OMIDAE  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  CIDAE  CIDAE  CIDAE  CONTRA  CONTR | HYALELLA AZTECA   | -   | 0    | 7   |               |
| MIDAE  DMIDAE  DMIDAE  DME  DAE  DAE  DAE  DATERA  DPTERA  DPTERA  DPTERA  AF  S  T  T  T  T  T  T  T  T  T  T  T  T   | ALL AMPHIPODA   |     |      |     | 172           |
| DAIDAE DAE DAE PTERA OPTERA OPTERA AF ENDAE ENELLIDAE ENELLA CIDAE CIDAE CIDAE CIDAE CICAE | TERRESTRIAL INSECT  | -   | 0    | 0   | •             |
| 2 1 0<br>3 4 12<br>3 7 0<br>97ERA  | DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE  | 62  | ō-   | 8 4 | 434           |
| 2 1 0<br>3 4 12<br>3 7 0<br>97ERA  | ALL DIPTERA   |     |      | ı   | 455           |
| 3 4 12 3 7 0 1 0   | CAENIS<br>CAENIS  | 8   | -    | ٥   |               |
| 0 1 0  | EPHEMERIDAE<br>HEXAGENIA  | 0   | 4    | 2   |               |
| 0  | EPHEMERELL IOAE<br>Evtemerella  | 6   | ~    | 0   |               |
|  | BAETISCIDAE<br>BAETISCA   | 0   | -    | 0   |               |
|  | ALL EPHEMEROPTERA   | •   |      |     | 227           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |     | 5/ 5/83       |
|---------------------------------------|------|-------------|-----|---------------|
| TRANSECT 7 STATION 3 (CONT'D)         | GRAB | GRAB COUNTS | STS | ESTIMATED     |
| TAXON                                 | -    | ~           | 8   | NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE        | (    |             |     |               |
| BRACHYCENTRUS                         | o    | 0           | -   |               |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE      | 0    | 0           | -   |               |
| HYDROP SYCHE                          | 0    | -           | 0   |               |
| LEPTOCERIDAE                          |      |             |     |               |
| CERACLEA                              | -    | 0           | 0   |               |
| POLYCENTROPODIDAE<br>NEURECLIPSIS     | -    | -           | 0   |               |
| ALL TRICHOPTERA                       |      |             |     | 7             |
| ACARINA                               | -    | 0           | 0   | 7             |
| GASTROPODA<br>AMMI COLA               | 9    | 4           | 37  |               |
| ELIMIA LIVESCENS                      | 23   | m           | 0   |               |
| ALL GASTROPODA                        |      |             |     | 758           |
| PELECYPODA<br>Sphaerioae<br>Sphaerium | ø    | -           | 0   | 011           |
| AL: PELECYPODA                        |      |             |     | 10            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                                   |            |             |       | 5/ 4/83        |
|---|------------|-------------|-------|----------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 1                                    | <b>3</b> - | GRAB COUNTS | UNITS | ESTIMATED      |
| NOVA  | -          | <b>v</b>    | ,     | 10.7.34. METER |
| A POTA  | 1008       | 155         | 136   | 6946           |
| ALL CNIDARIA  |            |             |       | 8946           |
| RHABDOCUELA   | ō          | 347         | 185   | 3733           |
| TRICLADIDA  | 4          | 9           | •     | 165            |
| NEMERTINEA  | 0          | 7           | 0     | <b>.</b>       |
| NEMATODA  | 9          | 4           | 38    | 723            |
| MIRUDINEA<br>GLOSSIPHONIDAE<br>GLOSSIPHONIA COMPLANATA<br>ALL HIRUDINEA | -          | -           | 0     | <b>2</b>       |
| OLIGOCHAETA<br>Nais   | 77         | 11          | 0     |                |
| SPIROSPERMA   | 7.4        | 96          | 53    |                |
| OTHER<br>ALL OLIGOCHAETA  | 157        | 718         | 354   | 10819          |
| -   | 4          | ø           | 36    | . 620          |
| ALL POLYCHAETA  |            |             |       | 620            |

| MACROZGOBENTHOS PONAR GRAB COUNT DATA                     |     |          |      | 5/ 4/83       |
|---|-----|----------|------|---------------|
| TRANSECT B STATION 1 (CONT'D)                             | 785 | OC S     | NTS  | ESTIMATED     |
| TAXON   | -   | 1 2 3    | 6    | NO./SQ. METER |
| CLADOCERA<br>1LYOCRYPTUS                                  | 0   | 0        | ND.  | 46            |
| ALL CLADGCERA   |     |          |      | 34            |
| COPEPODA  | 11  | 24       | -    |               |
| HARPACTICOIDA   | 8   | 11       | 5    |               |
| LIMMOCALANUS  | 0   | 0        | -    |               |
| PARACYCLOPS   | ٥   | -        | 0    |               |
| ALL COPEPODA  |     |          |      | 895           |
| OSTRACODA   | 32  | 0)       | 0    | 282           |
| AMPHIPODA<br>Gammarus                                     | 167 | 258      | 4    |               |
| HYALELLA AZTECA   | 37  | 5        | 0    |               |
| ALL AMPHIPODA   |     |          |      | 3581          |
| ISOPODA<br>ASELLUS  | 69  | <b>4</b> | •    | 813           |
| ALL ISOPODA   |     |          |      | 813           |
| TERRESTRIAL INSECT  | **  | 0        | 0    |               |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 6.0 | 0 633    | 0 98 | 9965<br>9872  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |       |    | 5/ 4/83   |
|---|------------|-------|----|---|
| TRANSECT 8 STATION 4 (CONT'D)           | ć          | 9     | ė. |   |
| TAXON                                   | <b>š</b> – | 1 2 3 | 20 | NO./SQ. METER   |
| EPHEMEROPTERA<br>CAENIDAE               |            |       |    | 0<br>1<br>3<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>7<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8 |
| CAENIS                                  | Ξ          | 36    | -  |   |
| ALL EPHEMEROPTERA                       |            |       |    | 785   |
| LEPIDOPTERA                             | 0          | -     | +  | 7   |
| TRICHOPTERA                             |            |       |    |   |
| LEPTUCERIDAE<br>CERACLEA                | -          | -     | 0  |   |
| OECETIS                                 | -          | -     | 0  |   |
| TELLE                                   | •          | •     | •  |   |
|   | •          | >     | >  |   |
| LINNEPHILIDAE<br>DYCHYDEYCHE            | •          | c     | c  |   |
|   | •          | •     | •  |   |
| POLYCENTROPODIDAE<br>Polycentropus      | 0          | 8     | 0  |   |
| ALL TRICHOPTERA                         |            |       |    | 76  |
| ODOMATA<br>CDENAGRIONIDAE               | -          | 0     | 0  | •   |
| ACARINA                                 | 8          | 8     | 0  |   |
| GASTROPODA<br>AMNI COLA                 | 57         | =     | 38 |   |
| ELIMIA LIVESCENS                        | 0          | 7     | 0  |   |
| GYRAULUS                                | 0          | 137   | 42 |   |
| TU AN ALIA                              | Œ          | 98    | 23 |   |
| 1 | )          | 3     | }  |   |
| ALL GASTROPODA                          |            |       |    | 3540  |

| 5/ 4/83                               |                               | ESTIMATED<br>NO./SQ. METER |            |             |          |   |           |     | C a a           |                |
|---------------------------------------|-------------------------------|----------------------------|------------|-------------|----------|---|-----------|-----|-----------------|----------------|
|                                       |                               | GRAB COUNTS                |            |             | 4        |   | C         | •   |                 |                |
|                                       |                               | ක්<br>දූර                  |            |             | 146      |   | -         | •   |                 |                |
|                                       |                               | 98 <b>-</b>                |            |             | 08       | ) | ÷         |     |                 |                |
| MACROZOOBENTHOS PONAR GRAB COUNT DATA | TRANSECT 8 STATION 1 (CONT'D) | TAXON                      | PELECYPODA | SPHAERIIDAE | PISIDIUM | : | SPHAERIUM | *** | ALL SPHAERIIDAE | ALL PELECYPODA |

| MACRUSCOSENITOS POMAR GAAS COOM CALA       |     |              |          |               |
|--|-----|--------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 2       |     | GRAB COUNTS  | KMTS     | ESTIMATED     |
|  | -   | 7            | 6        | NO./SQ. METER |
| CNIDARIA<br>HYDRA                          | 440 | 440 708 1353 | 1353     | 17224         |
| ALL CNIDARIA                               |     |              |          | 17224         |
| RHABDOCOELA                                | 35  | 25           | 42       | 188           |
| NEMERTINEA                                 | 0   | 8            | •        | :             |
| NEMATODA                                   | 1   | 13           | Ξ        | 1887          |
| OLIGOCHAETA<br>NAIS                        | •   | 0            | 8        |               |
| SPIROSPERMA                                | 9   | 146          | 61       |               |
| OTHER<br>ALL OLIGOCHAETA                   | 704 | 704 1423     | 514      | 19737         |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA<br>      | -   | 16           | <b>o</b> | 179           |
| ALL POLYCHAETA<br>CLAUDCERA<br>ILYOCRYPTUS | 5   | •            | <b>5</b> | 207           |
| ALI CLADOCERA                              |     |              |          | 207           |

| TRANSECT 8 STATION 2 (CONT'D)  GRAB COUNTS  TAXON  CYCLOPS BICUSPIDATUS  DIAPTOMUS  HARPACTICOIDA  LIMMOCALANUS  MESOCYCLOPS  ALL COPEDODA  SSTRACODA  MESOCYCLOPS  HARACTICOPE  MESOCYCLOPS  HARACTICOPE  MESOCYCLOPS  HARACTICOPE  HARACTICOP | ∞                           |            |                  |            |                         |
|--|-----------------------------|------------|------------------|------------|-------------------------|
| GRAB COUNTS ESTIMA  NO. / SQ.  NO. / SQ.  SECUSPIDATUS  FOR LANUS  |                             |            |                  |            |                         |
| DA   | TAXON                       | ত ∽        | Σ <b>₹8</b><br>Σ | STNUC<br>3 | ESTIMATED NO. /SO METER |
| A 1 1 8 16 16 16 16 16 16 16 16 16 16 16 16 16   |                             |            | 1                |            |                         |
| CALANUS  |                             | -          | -                | ∞          |                         |
| CCTCOIDA 81 87 74 CCALANUS CCA | DIAPTOMUS                   | •          | 9                | 16         |                         |
| CALANUS  | *****                       |            |                  |            |                         |
| CALANUS  | HARPACTICOIDA               | <b>6</b> 0 | 97               | 74         |                         |
| YCLOPS  YCLOPS | LIMNOCALANUS                | •          | c                | c          |                         |
| 1 0 0 1 1 0 1 1 EPODA  1 0 1 1 DA  1 0 1 1 DA  1 0 1 1 DA  1 DA  1 1 0 1 1 DA  1 DA  1 |                             | •          | •                | >          |                         |
| YCLOPS  YCLOPS  YCLOPS  YCLOPS  DA  DA  TO 1  DA  DA  THO 1  THO  | MESOCYCLOPS                 | -          | 0                | 0          |                         |
| YCLOPS  YCCOPS  YCCOPS |                             |            | )                | )          |                         |
| DA 1 0 1  DA 1 0 1  DA 17 26 37  LLA AZZECA 1 7 19  POREIA HOYI 6 0 1  PHIPODA 0 5 6  POGONIDAE 0 3 11  POGONIDAE 0 3 11  POGONIDAE 0 3 11  POGONIDAE 1 0 1  POGONIDAE 1 0 1  POGONIDAE 1 0 1  POGONIDAE 1 0 0 3 11  POGONIDAE 1 0 0 0 3 11  POGONIDAE 1 0 0 3 11  POGONIDAE 1 0 0 0 0 3 11  POGONIDAE 1 0 0 0 0 3 11  POGONIDAE 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | PARACYCLOPS                 | *          | 0                | -          |                         |
| DA  DA  DA  TO 1  DA  TO 1  DA  TRUS  LLA AZTECA  THOOREIA HOVI  FHIPODA  US  DOGONIDAE  DOGONIDAE  TO 1  TO |                             |            | )                |            |                         |
| DA  DA  THE DA | ALL COPEPODA                |            |                  |            | 2128                    |
| 17 26 37 LLA AZTECA 1 7 19 LLA AZTECA 1 7 19 POREIA HOYI 6 0 1 PHIPODA US 0PODA 0POGONIDAE 0 3 10  | DSTRACODA                   | -          | 0                | -          | -                       |
| FUS 17 26 37 16 21 26 37 17 26 37 18 20 2 10 20 3 20 2 10 3 20 2 10 3 30 57 60 2 10 3 30 57 60 2 10 3 57 60 2 10 3 57 60 | AMPHIPODA                   |            |                  |            |                         |
| LLA AZTECA 1 7 19  LLA AZTECA 6 0 1  POREIA HOVI 6 0 1  PHIPODA  US 0 5 6  US 0 0 3  POGONIDAE 0 3   | GAMMARUS                    | 11         | <b>5</b> 6       | 37         |                         |
| LLA AZ7ECA 1 7 19  PORETA HOVI 6 0 1  PHIPODA  US 0 5 6  US 0 0 3  POGONIDAE 0 3   |                             |            | i                | ı          |                         |
| POREIA HOVI PHIPODA PHIPODA US OPODA | HYALELLA AZTECA             | •          | 7                | Ğ          |                         |
| PHIPODA  US  US  OPODA  POGONIDAE  OPODA  OP | PONTOPOREIA HOYI            | w          | 0                | -          |                         |
| PHIPODA US OPUDA O | **** **********             |            |                  |            |                         |
| US 0 5 6 OPODA     | ALL AMPHIPODA               |            |                  |            | 785                     |
| US 0 5 6 OPODA POGONIDAE 0 0 3 102   | ISOPODA                     |            |                  |            |                         |
| OPODA POGONIDAE 0 0 3 ONIDAE 309 579 602 102   | ASELLUS                     | 0          | Ю                | 9          | 76                      |
| POGONIDAE 0 0 3 102 0 102 102  | ALL ISOPODA                 |            |                  |            | ;                       |
| POGONIDAE 0 0 3 OMIDAE 309 579 602   |                             |            |                  |            | 2                       |
| 0 0 3<br>309 578 602   | JIPTERA                     |            |                  |            |                         |
| 309 579 602  | CERATOPOGONIDAE             | 0          | 0                | က          |                         |
|  | CHIRDWOMIUAE<br>Ali Dibirba | 900        | 578              | 602        | 10261                   |

| GRAB COUNTS  1 2 2 3 6  1 1 0 0 1  1 1 0 0 1  1 2 2 2  2 0 0 1  2 0 0 1  2 0 0 1  2 0 0 0  3 3 4  4 23 8  6 38  7 6 38  7 7 8  8 8 9 1 32  8 9 1 32  9 1 1 1 0  1 1 2 2  0 0 1 1  1 2 2  0 0 0 1  1 3 1  1 3 1  1 3 0 0  0 0 0  1 0  | GRAB COUNTY 1 2 23 11 2 2 31 2 31 31 31 31 31 31 31 31 31 31 31 31 31   | STATION 2 (CONT'D) |        |          |                         |
|--|---|--------------------|--------|----------|-------------------------|
| PTERA  4 23 9  7 6 38  DIDAE  0 1 0  1 1 0  1 2  ERA  AE  SCENS  CARINATA  2 0 0   | PTERA PTERA OIDAE US ERA AE OO 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |                    | NB COU | NTS<br>3 | ESTIMATED NO./SQ. METER |
| AE ROPTERA AE ROPTERA AE   | AE 7 6 31 PODIDAE 0 3 ::  PODIDAE 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | ]<br>!<br>!        |        |          |                         |
| AE ROPTERA AE ROPTERA AE OPUS PUCTOR TERA TO 1 0 1 2 TO 1 1 1 TO  | AE ROPTERA POLIDAE O 3  |                    |        |          |                         |
| AE  ROPTERA  AE  O 3 3 3  AE  O 1 0  1 1 0  PODIDAE  OPUS  O | AE AE POOIDAE OPUS PTERA TDAE  OPUS PTERA TO 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | ◀                  | 23     | 0        |                         |
| AE  ROPTERA  AE  O 3 3 3  AE  OPUS   | AE AE POOIDAE OPUS PTERA TDAE  OO 1 TO  |                    |        |          |                         |
| AE AE ADDIDAE OPUS OPUS OPUS OPUS OPUS OPUS OPUS OPUS  | ROPTERA  AE  PODIDAE  OPUS  PTERA  IDAE  INCERA  O  | •                  | •      | 6        |                         |
| ROPTERA  AE  O 1 0  1 1 1 0  PODIDAE  OPUS  PTERA  IDAE  IDAE  ILOAE  O 1 2  O 1 2  O 1 2  O 1 2  O 1 2  O 1 1  O 0 1  O 0 1  O 0 1  O 0 1  O 0 1  O 0 0  O 0 1  O 0 0  O  | AE AE PDDIDAE OPUS PTERA IDAE  VESCENS OP 1   | •                  | Đ      | 9        |                         |
| AE  O  | AE  POOLDAE OPUS OPUS OPUS OPUS OPUS OPUS OPUS OPUS   |                    |        |          | 599                     |
| ERIDAE  ERIDAE  LEA  1   | ERIDAE  LEA  LEA  1   | 0                  | . ო    | 6        | 4                       |
| ERIDAE  LEA  LEA  IS  IS  INTROPODIDAE  NITROPUS  ENTROPUS  ENTROPUS  ENTROPUS  CON 1 2 2  CODA  OLA  OLA  LUS  TA SINCERA  O 2 3  TA TRICARINATA  O 0 1  TA TRICARINATA  O 0 2  TA TRICARINATA  O 0 0  TA TRI | EEIDAE  LEA  1  |                    |        |          |                         |
| LEA  ILAMPODIDAE  NTROPODIDAE  ENTROPUS  ICHOPTERA  ICHOPTERA  RIONIDAE  A LIVESCENS  ODA  ODA  ODA  ODA  TA SINCERA  O 1 1  O 0 1  TA SINCERA  O 2 3  TA TRICARINATA  O 0 0  TA TRICAR | LEA  1  |                    |        |          |                         |
| 15 INTROPODIDAE ENTROPUS ENTROPUS ICHOPTERA ICHOPTERA ICHOPTERA  A LIVESCENS ODA OLA A LIVESCENS ODA TA SINCERA ODA TA TRICARINATA  2 0 0  | IS  | 0                  | -      | 0        |                         |
| IS   | IS  |                    |        |          |                         |
| NTROPODIDAE  NTROPUS  ICHOPTERA  ICHOPTERA  RIONIDAE  A LIVESCENS  O   | NTROPODIDAE  ENTROPUS  ICHOPTERA  ICHOPTERA  RIONIDAE  A LIVESCENS  A LIVESCENS  TA SINCERA  O 0  1 3  1 3  TA SINCERA  O 0 0 | -                  | -      | 0        |                         |
| NTROPODIDAE  ENTROPUS  ENTROPUS  ICHOPTERA  RIONIDAE  1 2 2  0 1 1  0 0 1  1 2 2  0 0 1  1 1  1  | NTROPODIDAE  ENTROPUS  ICHOPTERA  ICHOPTERA  RIONIDAE  A LIVESCENS  A LIVESCENS  TA SINCERA  O 0  1 3  1 3                    |                    |        |          |                         |
| ENTROPUS  ICHOPTERA  RICHOPTERA  RICHOPTERA  A LIVESCENS  A LIVESCENS  O 1 1  CLUS  TA SINCERA  O 2 3  TA TRICARINATA  O 0 1  TA TRICARINATA  O 0 0  | ENTROPUS  ICHOPTERA  RICHOPTERA  RICHOPTERA  A LIVESCENS  A LIVESCENS  O 0  LUS  TA SINCERA  O 2                              |                    |        |          |                         |
| ICHOPTERA  RIONIDAE  0 0 1  1 2 2  0DA  0LA  A LIVESCENS  0 1 1  LUS  TA SINCERA  0 2 3  TA TRICARINATA  2 0 0   | ICHOPTERA  RIONIDAE  0 0  1 2  00A  0LA  A LIVESCENS  0 1  LUS  1 3  TA SINCERA  0 2  | •                  | -      | n        |                         |
| ICHOPTERA  RIONIDAE  1 2 2  0DA  0LA  LLVESCENS  0 1 1  LUS  TA SINCERA  0 2 3  TA TRICARINATA  2 0 0  | ICHOPTERA  RIONIDAE  1 2  0DA  0LA  LIVESCENS  1 3  1 3  1 3  1 3  1 3  |                    |        |          |                         |
| PIONIDAE  PLODA OLA A LIVESCENS O 1 1 LUS TA SINCERA O 2 3 TA TRICARINATA  PO 0 1 1 3 1 1 4 1 1 5 1 1  | RIONIDAE 0 0 0 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  |                    |        |          | 4                       |
| IVESCENS  1 2 2  1 2 2  1 2 2  1 2 3  1 3 1  1 3 1  1 3 1  1 1 3 1  1 1 2 2  0 0 1  1 1 3 1  1 1 3 1  1 1 2 0 0  | NIDAE  NIDAE  NIDAE  1 2  1 2  1 3  1 3  5 INCERA  0 0  1 3   | ٠                  |        |          |                         |
| 1 2 2 1VESCENS 0 1 1 0 0 1 1 1 3 1 5INCERA 0 2 3 TRICARINATA 2 0 0   | 1 2 95 91 3 1VESCENS 0 1 1 3 5 1 1 3 5 1 1 3 1 1 3 1 1 3 1 1 3 1 1 1 1  | •                  | 0      | -        | 7                       |
| 95 91 3  IVESCENS  0 1  1 3  SINCERA  0 2  TRICARINATA  2 0  | 95 91 3<br>IVESCENS 0 1<br>0 0 1<br>1 3   | •                  | 8      | 8        | 34                      |
| 95 91 3  IVESCENS  0 1  0 0  1 3  SINCERA  0 2  TRICARINATA  2 0   | 955 91 37 1VESCENS 0 1 1 3 2 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3  |                    |        |          |                         |
| IVESCENS  1 3  5 INCERA  7 TRICARINATA  2 0  | 1VESCENS 0 1 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3  | 56                 | 91     | 32       |                         |
| IVESCENS  1 3  5 INCERA  0 0  1 3  5 INCERA  0 2   | SINCERA 0 2   | (                  |        |          |                         |
| 51NCERA 0 2 2 TRICARINATA 2 0  | 0 0 1 3 1 3 1 0 2 2   | •                  | -      | -        |                         |
| SINCERA 0 2  | SINCERA 0 2   |                    | •      | •        |                         |
| SINCERA 0 2 TRICARINATA 2 0  | TA SINCERA 0 2  |                    | •      | •        |                         |
| SINCERA 0 2 TRICARINATA 2 0  | SINCERA   | -                  | 6      | -        |                         |
| SINCERA 0 2  | SINCERA   |                    |        |          |                         |
| TRICARINATA 2 0  |   | 0                  | 7      | ო        |                         |
|  | TOTCADINATA   | •                  | c      | c        |                         |
|  |   | •                  | •      | •        |                         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | GRAB COUNT DAT | •    |             | 5/ 4/83       |  |
|---------------------------------------|----------------|------|-------------|---------------|--|
| TRANSECT 8 STATION 2 (CONT'D)         | (CONT'D)       |      |             |               |  |
| TAXON                                 |                | CKAB | GRAB COUNTS | NO./SQ. METER |  |
| PELECYPODA                            |                |      |             | <br>          |  |
| SPHAERI IDAE                          |                |      |             |               |  |
| PISIDIUM                              |                | 7    | 0           | 76            |  |
|                                       |                |      |             |               |  |
| ALL PELECYPODA                        |                |      |             | 76            |  |
|                                       |                |      |             |               |  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |           |       |          | 5/ 4/83       |
|---|-----------|-------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 3    | 8         | A6 C0 | CNTS     | ESTIMATED     |
| TAXON                                   | -         | 1 2 3 | <b>m</b> | NO./SQ. METER |
|   |           |       |          |               |
| FISH EGGS                               | 60        | -     | 0        | 62            |
| !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! |           |       |          |               |
| ALL FISH                                |           |       |          | 62            |
| CMIDARIA                                |           |       |          |               |
| HYDRA                                   | 1948 1416 | 1416  | 514      | 26706         |
| ALL CNIDARIA                            |           |       |          | 26706         |
| RHABDOCOELA                             | 8         | 5     | \$       | 1853          |
| NEMATODA                                | 76        | 24    | ۵        | 751           |
| OLIGOCHAETA                             | ;         | •     | 8        |               |
| MAIS                                    | 4         |       | R        |               |
| SPIROSPERMA                             | 384       | 8     | 652      |               |
|   | 1836      |       | 7.7      |               |
| ALL DLIGOCHAETA                         |           |       | ;        | 26286         |
| POLYCHAETA                              |           |       |          |               |
| MANAYUNKIA SPECIOSA                     | 0         | n     | 32       | 262           |
| ALL POLYCHAETA                          |           |       |          | 262           |
| CLADOCERA                               |           |       |          | ٠             |
| DAPHNIA                                 | -         | 0     | 7        |               |
|   | C         | -     | -        |               |
|   | •         | •     | •        |               |
| ALL CLADOCERA                           |           |       |          | 34            |
|   |           |       |          |               |

| TRANSECT 8 STATION 3 (CONT'D)  TAXON  COPEDODA  CYCLOPS BICUSPIDATUS  DIAPTOMUS  HARPACTICOIDA  LIMMOCALANUS  PARACYCLOPS  AMPHIPODA  GAMMARUS  HYALELLA AZTECA  FONTOPOREIA HOYI  ALL SOPODA  ALL ISOPODA  DIPTERA  CHANDAMIDAE  TIMOCALAN  AMPHIPODA  GAMMARUS  HYALELLA AZTECA  FONTOPOREIA HOYI  ALL SOPODA  DIPTERA  CHIROMOMIDAE  EMPINIONE  TIMOLOM  TIMOLO | MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |          |     | 5/ 4/83   |
|--|---------------------------------------|-----|----------|-----|---|
| S BICUSPIDATUS  S BICUSPIDATUS  NUS.  TICOIDA  ALANUS  CLOPS  CLOPS  CLOPS  CLOPS  AAAANUS  CLOPS  AAAANUS  AAAANUS  AAAANUS  AAAANUS  CLOPS  AAAANUS  AAAANUS  AAAANUS  AAAANUS  AAAANUS  AAAAANUS  AAAAANUS  AAAANUS  AAAAANUS  AAAAANUS  AAAAANUS  AAAAANUS  AAAAANUS  AAAAANUS  AAAAAAAAAA   | ∞                                     | å   | 2        | M   | COTTANTES   |
| S BICUSPIDATUS  S BICUSPIDATUS  MUS  TICOIDA  ALANUS  CLOPS  CLOP | ¥.                                    | -   | 8        |     | NO./SQ. METER   |
| LANUS  LOTODA  LANUS  LANUS  LANUS  LOPS  LOPS  A AZTECA  A AZTECA | COPEPODA<br>CYCLOPS BICUSPIDATUS      | 60  | 6        | ٥   | /<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/<br>/ |
| LANDS LOTODA LANDS LOTODA LANDS LOTODA LANDS LOTOS LOT |                                       | •   | •        | • • |   |
| COIDA  | DIAPTOMUS                             | -   | 4        | o   |   |
| LANUS LANUS LANUS LANUS PODA PODA  A AZTECA A AZTECA A AZTECA B 1 7 BEIA HOYI PODA  IPODA  GONIDAE FILE FILE FILE FILE FILE FILE FILE FIL  | HARPACTICOIDA                         | 6   | 23       | •   |   |
| LOPS LOPS LOPS FOODA  A AZTECA A AZTECA REIA HOVI IPODA IODA IIPODA IIPODA IIPODA III III III III III III III III III I  | LIMMOCALANUS                          | 0   | 4        | -   |   |
| PODA  A AZTECA  A AZTECA  A AZTECA  REIA HOYI  IPODA  GONIDAE  GONIDAE  11 3 0  2 12 12  2 2 3  3 3 497 644 11  11 0 0 11  11 10 0 11  11 10 0 11  11 11  11 11  12 12  13 11  14 11  15 11  15 11  16 11  17 11  18 | PADACYCLODS                           | 0   | -        | 0   |   |
| S 20 12 12  A AZTECA  A AZTECA  B 1 7  ELA HOYI  IPDOA  GONIDAE  GONIDAE  F. F   | ALL COPEDOA                           | i   |          |     | 764   |
| S  | OSTRACODA                             | +   | 0        | ٥   | 28  |
| MUS  | AMPHIPODA                             |     |          |     |   |
| LLA AZTECA  BOREIA HOYI  POREIA HOYI  PHIPODA  US  2 2 3  CONDAR  POGONIDAE  DAE  1 0 0  11  | GAMMARUS                              | 20  | 7        | 7   |   |
| POREIA HOVI 2 8 2 PHIPODA  US  US  OPODA  POGONIDAE  DAE  1 0 0 11   | HYALELLA AZTECA                       | ∞   | -        | 7   |   |
| PHIPODA  US  US  OPODA  POGONIDAE  DAE  1 0 0  | PONTOPOREIA HOYI                      | ~   | •        | 8   |   |
| US   |                                       |     |          |     | 496   |
| US 2 2 3 3 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9   | ISOPODA                               | ,   | ,        | ,   | ,   |
| POGONIDAE 7 8 3 POGONIDAE 567 497 644 DAE 0 1 0 0 DAE 1 0 0  | ASELLUS                               | 4   | <b>~</b> | m   | <b>4</b>  |
| POGONIDAE 7 8 3 OMIDAE 567 497 644 DAE 0 1 0 0 DAE 1 0 0   | ALL ISOPODA                           |     |          |     | 48  |
| 567 497 644<br>0 1 0<br>1 0 0  | DIPTERA<br>CERATOPOGONIDAE            | ^   | 60       | ო   |   |
| DIOAE 0 1 0 1 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0  | CHECONOMIDAE                          | 567 | 497      | 644 | 11762   |
| LIDAE 1 0 0  | EMPIDIOAE                             | 0   | - (      | 0   |   |
|  | TIPULIDAE<br>All Dibtes               | -   | 0        | 0   | 11900   |

| TRANSECT 6 STATION 3 (CONT D)  TAXON  |  |                  |             |        | 20/1                       |
|--|--|------------------|-------------|--------|----------------------------|
| 1 2 2 3 3 10 4 6 6 10 4 10 5 10 6 1 1 4 10 5 10 6 10 6 1 10 6 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10 6 1 10  | 8 STATION 3  | Š                | 9           |        | 9                          |
| FA 15 4 6  E 37 20 4  IDAE  LA 5 661  ROPTERA  TERA  TO 0 1  PODIDAE  SIS  POTERA  TO 0 2  A1  A1  A1  A1  A1  A2  A1  A1  A2  A3  A4  A4  A4  A4  A6  A6  A1  A1  A1  A1  A1  A1  A1  A1  |  | ž -              | 5<br>2<br>3 | E      | ESTIMATED<br>NO./SQ. METER |
| 10 AE  10 AE  10 AE  10 AE  11 A 5 5 6 6 7 7 7 20 A 1 7 7 20 AE  10 A | EPHEMEROPTERA  | ;<br>;<br>;<br>! |             |        | <br>                       |
| 1DAE 1DAE 11DAE 11DAE 11DAE 11DAE 12   | CAENIDAE   | ;                | ,           |        |                            |
| 1DAE LA ROPTERA ROPTER | CAENIS   | r<br>S           | 4           | ဖ      |                            |
| 1DAE LA ROPTERA ROPTER | EPHEMERIDAE  |                  |             |        |                            |
| 1DAE ROPTERA ROPTERA 1DAE HE SIS SIS PTERA O 0 1 PODIDAE SIS O 0 0 2 PTERA O 1 0 2 INCERA I 0 0 0 1 O 0 0 0 0 O 0 0 0 0  | HEXAGENIA  | 37               | 8           | •      |                            |
| TOPTERA ROPTERA ROPTER |  |                  |             |        |                            |
| NOPTERA  PTERA  1DAE  HE  SIS  PODIDAE  SIS  O 1 0  TERA  O 10 2  INCERA  1 0 0  | EPHEMERELLA  | -                | 4           |        |                            |
| DTERA  10AE  HE  AAE  SIS  PODIDAE  SIS  O 0 1  O 0 2  PTERA  O 10 2  INCERA  1 0 0  | ALL EPHEMEROPTERA  |                  |             |        | 661                        |
| 10 AE  | LEPIDOPTERA  |                  |             |        |                            |
| TERA SYCHIDAE SYCHIDA | PYRALIDAE  | 0                | 0           | -      |                            |
| TERA SYCHIOAE SYCHIOAE SYCHIOAE SYCHIOAE SYCHIOAE NODES NODES CLIPSIS  | option of the second of the se | C                | •           | •      |                            |
| SYCHIDAE SYCHE ERIDAE NODES NOTE NOTE NOTE NOTE NOTE NOTE NOTE NOTE  | ALL LEPIDOPTERA  | י                | >           | >      | 28                         |
| SYCHIDAE  PSYCHE  PSYCHE  RETORE  NODES  NTROPODIDAE  CLIPSIS  CLIPSIS  CLIPSIS  ODA  ODA  TA SINCERA  1 0 0   | TRICHOPTERA  |                  |             |        |                            |
| ERIDAE NODES NTROPODIDAE CLIPSIS CLIPSIS CLIPSIS CLIPSIS CLIPSIS CLIPSIS CHAPTERA ODA ODA OLA TA SINCERA 1 0 0   | HYDROPSYCHIDAE<br>HYDROPSYCHE  | п                | -           | 0      |                            |
| NODES  NTROPODIDAE  NTROPODIDAE  CLIPSIS  CLIPSIS  ODA  ODA  OLA  TA SINCERA  1 0 0  | LEPTOCERIDAE   |                  |             |        |                            |
| CLIPSIS  CLIPSIS  ICHOPTERA  ODA  OLA  LUS  TA SINCERA  1 0 0  | TRIAENODES   | 0                | 0           | -      |                            |
| CLIPSIS  CLIPSIS  CHOPTERA  ODA  ODA  ODA  OLUS  TA SINCERA  1 0 0   | POLYCENTROPODIDAE  |                  |             |        |                            |
| 1CHOPTERA 0 10 2 0DA 0LA 44 48 105 0LA 0LUS 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | NEURECL IPSIS  | 0                | 0           | ~      |                            |
| 000A<br>0LA<br>0LA<br>1LUS<br>1 0 1 0<br>1 0 1 0<br>1 TA SINCERA 1 0 0   | ALL TRICHOPTERA  |                  |             |        | 7                          |
| 44 48 105<br>0 1 0<br>5 7 29<br>SINCERA 1 0 0  | ACARINA  | 0                | 5           | 8      | 68                         |
| 11CULA   | BASTROPODA   | ;                | :           | ,      |                            |
| SA 5 7 29 1 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0  | AMNICOLA   | 7                | 4           | Č<br>Š |                            |
| SA SA SINCERA 1 0 0  | GYRAULUS   | 0                | -           | 0      |                            |
| VATA SINCERA 1 0 0   | PHYSA  | ស                | _           | 58     |                            |
|  | VALVATA SINCERA  | -                | 0           | 0      |                            |
|  |  |                  |             |        |                            |

| MACROZGOBENTHOS PONAR GRAB COUNT DATA |                  |             |      | 5/4/83                                  |
|---------------------------------------|------------------|-------------|------|---|
| TRANSECT 8 STATION 3 (CONT'D)         |                  |             |      |   |
|                                       | <b>GR</b>        | GRAB COUNTS | JNTS | ESTIMATED                               |
| TAXON                                 | -                | 2           | е    | NO./SQ. METER                           |
| PELECYPODA                            | ;<br>;<br>;<br>; |             |      | 1 |
| SPHAERIIDAE                           |                  |             |      |   |
| PISIDION                              | 31               | 7.1         | 8    |   |
|                                       |                  |             |      |   |
| SPHAERIUM                             | 0                | 0           | 11   |   |
|                                       |                  |             |      |   |
| ALL SPHAERIIDAE                       |                  |             |      | 1453                                    |
| ALL PELECYPODA                        |                  |             |      | 1453                                    |
|                                       |                  |             |      |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |             |      | 5/ 4/83       |
|---|------------|-------------|------|---------------|
| ST. CLAIR RIVER TRANSECT 9 STATION 1    | 3          | GRAB COUNTS | STA  | ESTIMATED     |
| TAXON                                   | -          | 61          | . 6  | NO./SQ. METER |
|   | 5          | i           | 97   | 1894          |
| ALL CNIDARIA                            |            |             |      | 1894          |
| TRICLADIDA                              | Φ          | 41          | 7    | 413           |
| NEMERTINEA                              | 0          | 0           | -    |               |
| NEMATODA                                | 8          | 42          | 63   | 1061          |
| HIRUDINEA<br>ERPOBDELLIDAE              | -          | · e         | •    |               |
| GLUSSIPHUNIIDAE<br>HELDBDELLA STAGNALIS | •          | -           | 0    |               |
| ALL HIRUDINEA                           |            |             |      | 62            |
| DLIGOCHAETA                             | •          | =           | φ    |               |
| SPIROSPERMA                             | 87         | 0           | 80   |               |
| OTHER<br>ALL OLIGOCHAETA                | 429        | 210         | 27.7 | 7541          |
| POLYCHAETA<br>Manayumkia speciosa       | 257        | 208         | 359  | 5654          |
| ALL POLYCHAETA                          |            |             |      | 5654          |
| CLADOCERA<br>ILYOCRYPTUS                | <b>K</b> P | <b>6</b>    | -    | 172           |
| ALL CLADOCERA                           |            |             |      | 172           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |            |             |           | 5/ 4/83                    |
|---|------------|-------------|-----------|----------------------------|
| TRANSECT 9 STATION + (CONT'D)                             |            |             |           |                            |
|   | <u>g</u> – | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| A<br>PS BICUSPIDATUS                                      | 0          | ٥           | -         | 1                          |
| HARPACTICOIDA   | 60         | 17          | 9         |                            |
| PARACYCLOPS   | 6          | 0           | 0         |                            |
| ALL COPEPODA  |            |             |           | 310                        |
| OSTRACODA   | <b>L</b> D | -           | €         | 96                         |
| AMPHI PODA<br>GAMMARUS                                    | 4          | 89          | 33        |                            |
| HYALELLA AZTECA<br>ALL AMPHIPODA                          | 253        | 127         | <b>6</b>  | 4228                       |
| I SOPODA<br>ASELLUS                                       | 27         | 69          | <b>7</b>  |                            |
| LIRCEUS   | <b>0</b>   | ø           | ın        |                            |
| ALL ISOPODA   |            |             |           | 895                        |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 19<br>320  | 11          | 17        | 7369<br>7692               |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS<br>CAENIS             | 255        | 281         | 171       |                            |
| EPHEMERIDAE<br>HEXAGENIA                                  | 5          | 20          | ō         |                            |
| ALL EPHEMEROPTERA   |            |             |           | 5165                       |

| STATION 1 (CONT'D)  GRAB COUNTS ESTIMAT  1 2 3 NO./SQ.  10 0 1  10 0 1  14 0 0  14 0 1  16 0 0  17 0 1  18 0 0  19 | MACKUZUUBENITUS PUMAK GRAB CUUNI DAIA   |        |     |          | 5/ 4/83   |
|--|---|--------|-----|----------|---|
| PTERA  PTERA  PTERA  1 0 0 1  1 0 0 1  14  | TRANSECT 9 STATION 1 (CONT'D)           |        |     | !        |   |
| PTERA 10AE HE AE   |   | - 6KAB | 8 % | 5 E      | ESTIMATED<br>NO./SQ. METER  |
| PTERA  100AE  HE  AE  AE  AE  AE  AE  AE  AE  AE   |   | c      | •   | •        | ?<br>1<br>1<br>5<br>7<br>7<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8 |
| DPTERA  A  HIDAE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  C   | 111111111111111111111111111111111111111 | >      | >   | -        |   |
| TOAE HE AE   | OTHER<br>ALL LEPIDOPTERA                | -      | 0   | 0        | ‡   |
| HE 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0   | TRICHOPTERA                             |        |     |          |   |
| DAE  ES  CHE  CHE  TO 1  TO 1  TO 2  DPODIDAE  TO 2  TO 3  TO 0  TO 1  TO 0  T | HYDROPSYCHIDAE                          | c      | •   | •        |   |
| DAE  ES  CHE  CHE  CHE  CHE  CHE  CHE  CHE   |   | >      | •   | >        |   |
| ES 3 11 9 1 CHE  | LEPTOCERIDAE                            |        |     |          |   |
| CHE  | CERACLEA                                | -      | 0   | -        |   |
| DPODIDAE  ROPUS  OPTERA  ESS  11 8  14 7 7  7 0 2  7 0 2  14 2 2  1 0 0  1 0 0   |   | •      |     | (        |   |
| CHE  | MYSTACIDES                              | 77     | =   | <b>D</b> |   |
| DPODIDAE   | NECTOPSYCHE                             | •      | 0   | 0        |   |
| 14 7 7 DPODIDAE  | 1                                       |        |     |          |   |
| DPODIDAE   | OECETIS                                 | =      | _   | 7        |   |
| DPODIDAE   | ****                                    | 1      |     |          |   |
| DPODIDAE   | SETODES                                 | _      | 0   | 7        |   |
| MOPUS 4 2 2 2 2 2 3 0 0 0 0 0 1 1 0 0 0  | POLYCENTROPODIDAE                       |        |     |          |   |
| 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | POLYCENTROPUS                           | •      | ~   | ~        |   |
| OPTERA 2 0 1   |   | •      | c   | c        |   |
| - 0  | ALL TRICHOPTERA                         | •      | •   | •        | 565   |
| -  | ACARINA                                 | ~      | 0   | -        | . 12  |
|  | TABNICBADA                              | -      | c   | c        | ,   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |             |          | 5/ 4/83                 |
|---------------------------------------|-----------|-------------|----------|-------------------------|
| TRANSECT 9 STATION 1 (CONT'D)         |           |             |          |                         |
|                                       | g -       | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER |
| GASTROPODA                            |           |             |          |                         |
| AMMACOLA                              | <b>70</b> | 63          | 9        |                         |
| ELIMIA LIVESCENS                      | 0         | ~           | 7        |                         |
| GYRAULUS                              | 5         | 38          | 7        |                         |
| PHYSA                                 | e         | -           | 4        |                         |
| ALL GASTROPODA                        |           |             |          | 1488                    |
| PELECYPODA                            |           |             |          |                         |
| SPHAERIIDAE<br>Pisidium               | 80        | 28          | 3        |                         |
| • • • • • • •                         | ;         | 1           | ,        |                         |
| SPHAERIUM                             | 0         | 8           | Ø        |                         |
| ALL SPHAERIDAE                        |           |             |          | 793                     |
| ALL PELECYPODA                        |           |             |          | 723                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA         |            |             |           | 5/ 4/83                    |
|---|------------|-------------|-----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 9 STATION 2          | į          | !           |           |                            |
| TAXON   | <b>3</b> - | GRAB COUNTS | STAD<br>8 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                             | ŧ.         | 0           | 287       | 2080                       |
| ALL CNIDARIA                                  |            |             |           | 2080                       |
| RHABDOCOELA                                   | 67         | 5           | 5         | 1508                       |
| TRICLADIDA                                    | 0          | 0           | •         | 28                         |
| NEMERTINEA                                    | -          | -           | 0         | 7                          |
| NEMATODA                                      | 5          | 8           | 9         | 1136                       |
| OLIGOCHAETA<br>NAIS                           | -          | 0           | 0         |                            |
| SPIROSPERMA                                   | 182        | 112         | <u>\$</u> |                            |
| OTHER<br>ALL OLIGOCHAETA                      | 27.6       | 624         | 699       | 41881                      |
| POLYCHAETA MANAYUNKIA SPECIOSA A1: PDIYCHAETA | <b>‡</b>   | ū           |           | 967                        |
| CLADOCERA<br>DAPHNIA                          | 0          | 0           | -         | <b>B</b>                   |
| ILYOCKPTUS<br><br>ALL CLADOCERA               | ā          | -           | <b>.</b>  | ,                          |
|   |            |             |           | 107                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |       |     |                      | 5/ 4/83       |
|--|-------|-----|----------------------|---------------|
| TRANSECT 9 STATION 2 (CONT'D)              | 200   | ٥   | 2276                 | 43.144.1133   |
|  | ž -   | 3 m | 1 2 3                | NO./SQ. METER |
| 01010                                      | ٥     | 7   | ٥                    | <br>          |
|  | •     | 1   | •                    |               |
| CYCLOPS BICUSPIDATUS                       | -     | 0   | 0                    |               |
| $\tilde{\mathbf{z}}$                       | 6     | 0   | ٥                    |               |
| 4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -    | ,     | Č   | 9                    |               |
| TARFACILCOLDA                              | •     | 35  | 250                  |               |
| LIMNOCALANUS                               | -     | 6   | 0                    |               |
| PARACYCLOPS                                | 8     | 0   | 0                    |               |
| ALL COPEDODA                               |       |     |                      | 1639          |
| OSTRACODA                                  | 4     | -   | -                    | <b>7</b>      |
| AMPHIPODA                                  | \$    | 5   | 8                    |               |
|  | •     | •   | ;                    |               |
|  | 0     | 0   | 10                   |               |
| PONTOPOREIA HOYI                           | ო     | 0   | 8                    |               |
| ALL AMPHIPODA                              |       |     |                      | 1005          |
| I SOPODA<br>A SELLUS                       | o     | 0   | ø                    | 7             |
| ALL ISOPODA                                |       |     |                      | 7             |
| TERRESTRIAL INSECT                         | -     | 0   | 0                    | ,             |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIROMOMIDAE | 5 E E | - 2 | 4 0 <del>6</del> 2 9 | 9634          |
| ALL DIPTERA                                |       |     |                      | 2898          |

| TAXON  TA | •                         |     |       |             |   |
|--|---------------------------|-----|-------|-------------|---|
| FRA  A   | <b>D</b>                  | 8 - | 8 COU | STM<br>3    | ESTIMATED<br>NO./SQ. METER  |
| A  | EPHEMEROPTERA<br>CAENIDAE | !   |       | )<br>1<br>1 | ;<br>1<br>2<br>3<br>4<br>4<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| A E MA E   | CAENIS                    | 1   | NO.   | •           |   |
| LIDAE LLA LLA LLA LLA A BAE BAE BAE BAE BAE BAE BAE BAE BAE  | EPHEMERIDAE<br>Hexagenia  | ø   | 8     | 7           |   |
| LLA  A  BAE  BAE  BAE  BAE  BAE  BAE  BA   |                           | ı   | ı     | •           |   |
| A ACUTA  REPOPTERA  O 0 1  DAE  1 0 0  2 6 0  2 6 0  1 1 1  TS 40 92  TY ACUTA  TRICARINATA  12 5 10   | EPHEMERELLA               | 0   | 0     | 6           |   |
| DPTERA  OPTERA  TWESCENS  TRICARINATA  TAB  O 1 0  1 1 6  1 1 6  1 1 6  1 1 6  1 1 6  1 1 5  1 1 6  1 1 5  1 1 1 5  1 1 1 1  | ALL EPHEMEROPTERA         |     |       |             | 337   |
| DAE  1 0 0  2 6 0  2 6 0  1 1  1 1  1 1  1 1  1 1  1 1  1 1  | LEPIDOPTERA               | 0   | 0     | -           | ٢   |
| DAE  1 0 0  2 6 0  DPTERA  1 1 1  1 1 1  1 1 6  RA ACUTA  TRICARINATA  12 5 10   | TRICHOPTERA               |     |       |             |   |
| DPTERA  DPTERA  TWESCENS  TWESCENS  TRA ACUTA  TRICARINATA  TRICARINATA  TO 1 0  TRICARINATA  TO 1 0  TRICARINATA  TO 1 0  TRICARINATA  TO 1 0   | LEPTOCERIDAE              |     |       |             |   |
| DPTERA  DPTERA  1  | MYSTACIDES                | -   | 0     | 0           |   |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | DECETIS                   | 7   | ø     | 0           |   |
| DPTERA  O 1 1  IVESCENS  IVESCENS  O 1 1  O 2 1  TRICARINATA  12 5 10  | 3 t                       |     |       |             |   |
| IVESCENS  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | SETODES                   | a   | 0     | 0           |   |
| TS 40 92  TS A0 92  TS ACUTA  TRICARINATA  1 1 6  1 0 1 0  175 A0 92  1 0 2 1  1 0 2 1  1 1 5  | ALL TRICHOPTERA           |     |       |             | 76  |
| TWESCENS  TWESCENS  TWESCENS  THE ACUTA  TRICARINATA  TO 1 0  TRICARINATA  TO 1 0  TRICARINATA  TO 1 0   | ACARINA                   | 0   | -     | -           | 2   |
| 75 40 92  ENS   UTA  0 1 0  12 5 10  | GASTROPODA                |     |       |             |   |
| ENS 3 2 6  0 2 4  0 1 6  RINATA 12 5 10  | AMMICOLA                  | 7.8 | Ş     | 85          | ٠   |
| UTA 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | ELIMIA LIVESCENS          | 0   | N     | •           |   |
| UTA 1 6 12 5 10  |                           | c   | •     | •           |   |
| UTA 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 10 10  |                           | >   | ٧     | •           |   |
| UTA 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | PHYSA                     | -   | -     | 9           |   |
| UTA 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | ***                       |     |       |             |   |
| RINATA 12 5 10   | PLEUROCERA ACUTA          | 0   | -     | 0           |   |
| 1 + 1 + 2 + 4  | VALVATA TRICARINATA       | 12  | ស្រ   | 9           |   |
|  | *******                   |     |       |             |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |             | 5/ 4/83                    |
|---------------------------------------|-----------|-------------|----------------------------|
| TRANSECT 9 STATION 2 (CONT'D)         |           |             |                            |
| TAXON                                 | GRAB<br>1 | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| PELECYPODA                            | :         | i'          |                            |
| SPHAERI IDAE                          |           |             |                            |
| PISIDIUM                              | 47 14     | 14 11       |                            |
|                                       |           |             |                            |
| SPHAERIUM                             | 0         | 8           |                            |
| ****                                  |           |             |                            |
| ALL SPHAERIIDAE                       |           |             | 551                        |
| ALL PELECYPODA                        |           |             | 1 55                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |              |       |      | 5/ 4/83       |
|---------------------------------------|--------------|-------|------|---------------|
| ST. CLAIR RIVER TRANSECT 9 STATION 3  |              | į     | 9    | 100           |
|                                       | -            | 1 2 3 | n en | NO./SQ. METER |
| FISH                                  |              | ŀ     |      |               |
|                                       | <del>.</del> | 0     | 74   | 103           |
|                                       |              |       |      | 103           |
| CNIDARIA                              |              |       |      |               |
| HYDRA                                 | <b>6</b>     | Ξ     | 31   | 3903          |
| ALL CNIDARIA                          |              |       |      | 3902          |
| RHABDOCOELA                           | 27           | •     | 52   | 388           |
| TRICLADIDA                            | -            | 0     | 0    | 7             |
| NEMATODA                              | 4            | +     | 5    | 764           |
| OLIGOCHAETA                           | 6            | 0     | "    |               |
| SPIROSPERMA                           | 125          | 136   | 9    |               |
| OTHER<br>ALL OLIGOCHAETA              | 347          |       | 313  | 9545          |
| POLYCHAETA<br>Manayunkia speciosa     | <b>▼</b>     | ~     | 0    | <b>‡</b>      |
| ALL POLYCHAETA                        |              |       |      |               |

B-87

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |     |         |                | 5/ 4/83  |
|--|-----|---------|----------------|--|
| TRANSECT 9 STATION 3 (CONT'D)              | i   |         | !              |  |
| TAXON                                      | ž – | 98<br>8 | GRAB COUNTS    | ESTIMATED<br>NO./SQ. METER   |
| RA   | 2   | 2       | 0              | 1<br>2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| DAPHNIA PULEX                              | •   | 0       | , m            |  |
| DAPHNIA SCHODLERI                          | 0   | C       | 6              |  |
| ILYOCRYPTUS                                | , E | ) LC    | · <del>-</del> |  |
| ALL CLADGCERA                              |     | •       | •              | 193  |
| COPEPODA<br>Diaptomus                      | ស   | 4       | 8              |  |
| HARPACTICOIDA                              | 89  | Ø       | 4              |  |
| LIMNOCALANUS                               | m   | 7       | 0              |  |
| ALL COPEPODA                               |     |         |                | 668  |
| OSTRACODA                                  | ED. | -       | 0              | 4  |
| AMPHIPODA<br>Gammarus                      | 11  | 0       | 7              |  |
|  | 50  | -       | 6              |  |
| PONTOPOREIA HOVI                           | NO. | ID.     | 8              |  |
| <  |     |         |                | 448  |
| TERRESTRIAL INSECT                         | 0   | -       | 0              | 7  |
| OIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE | 738 | 5       | 3              |  |
| ALL DIPTERA                                |     |         |                | 11246  |

C

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |          |      | 5/ 4/83       |
|---|------------|----------|------|---------------|
| TRANSECT 9 STATION 3 (CONT'D)           | 9          | <b>2</b> | P.T. | 031447193     |
| TAXON                                   | <b>5</b> - | 1 2 3    | 200  | NO./SQ. METER |
| EPHEMEROPTERA                           |            |          |      |               |
| CAENIDAE                                | •          | •        | •    |               |
| CAENIS                                  | •          | •        | 0    |               |
| EPHEMERIDAE                             |            |          |      |               |
| HEXAGENIA                               | =          | 28       | 22   |               |
|   |            |          |      |               |
| EPHEMERELLIDAE                          |            | ,        | •    |               |
| EPHEMERELLA                             | -          | 0        | 0    |               |
| ALL EPHEMEROPTERA                       |            |          |      | 503           |
|   |            |          |      |               |
| COLEGE                                  |            |          |      |               |
| DOBIRAPHIA                              | 0          | 0        | 8    |               |
|   | •          | •        | )    |               |
| ALL COLEOPTERA                          |            |          |      | 7             |
| LEPIDOPTERA                             | 0          | 0        | -    | 7             |
| AGECHOLEGA                              |            |          |      |               |
| HYDROPSYCHIDAE                          |            |          |      |               |
| CHEUMATOPSYCHE                          | -          | 0        | ĸ    |               |
| SHONORAN                                | -          | C        | o    |               |
|   | •          | •        | )    |               |
| LEPTOCERIDAE                            |            |          |      |               |
| CERACLEA                                | 0          | 0        | -    | •             |
|   |            |          | 1    |               |
| MYSTACIDES                              | n          | 0        | 0    |               |
|   | (          | (        | •    |               |
|   | >          | >        | -    |               |
| DECETIS                                 | ~          | 0        | 0    |               |
| 1 |            |          |      |               |
| ALL TRICHOPTERA                         |            |          |      | 76            |
| ACARINA                                 | 0          | 4        | -    | 34            |

| ALAU INDO DAME TOTAL                    |     |             |      | 5/ 4/83       |
|---|-----|-------------|------|---------------|
| TRANSECT 9 STATION 3 (CONT'D)           |     |             |      |               |
| TAXON                                   | 8 - | GRAB COUNTS | STAL | ESTIMATED     |
| GASTROPODA                              | .   | • !         | ,    | MO./SQ. METER |
| AMNICOLA                                | 8   | •           |      |               |
|   | D   | 12          | 28   |               |
| ELIMIA LIVESCENS                        | -   | ٥           | 67   |               |
| GYRAULUS                                | •   |             | •    |               |
| ***                                     |     | 0           | 4    |               |
| PHYSA                                   | ;   | (           | ,    |               |
|   | :   | >           | 0    |               |
| VALVATA TRICARINATA                     | •   | 0           | 0    |               |
| ALL GASTROPODA                          |     |             |      | Č             |
| PELECYPODA                              |     |             |      | 0             |
| SPHAERIIDAE                             |     |             |      |               |
| PISIDIUM                                | 4   | ;           | į    |               |
| * | 2   | *           | 87   | 475           |
| ALL PELECYPODA                          |     |             |      | į             |
|   |     |             |      | 475           |

B-90

(

| MACROZDOBENTHOS PONAR GRAB COUNT DATA            |     |          |            | 5/ 4/83       |
|--|-----|----------|------------|---------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 1            | É   | 8        |            |               |
| TAXON  | Š - | B ~      | 1 2 3      | NO./SQ. METER |
| _  | 2   | 0        | 7          | 101           |
| ALL CNIDARIA                                     |     |          |            | 131           |
| RHABDOCDELA                                      | -   | N        | 0          | ÷             |
| NEMATODA   | ĸ   | ^        | ç          | 145           |
| OLIGOCHAETA<br>Mais                              | •   | 0        | -          |               |
| SPIROSPERMA                                      | 0   | -        | 0          |               |
| OTHER<br>ALL OLIGOCHAETA                         | ā   | <b>5</b> | 8          | 620           |
| MANAYUNKIA SPECIOSA ALL POLYCHAETA               | •   | •        | 0          | r r           |
| CLADDCERA DAPHNIA GALEATA MENDOTAE ALL CLADOCERA | -   | •        | •          | r r           |
| COPEPUDA<br>HARPACTICOIDA                        | 0   | 5        | 8          | ·             |
| LIMMOCALAMUS<br>ALL COPEPODA                     | m   | 0        | -          | 131           |
| AMPHI PODA<br>GAMMARUS                           | a   | -        | <b>s</b> n | s<br>s        |
| ALL AMPHIPODA                                    |     |          |            | SC<br>SC      |

|                                      |       |             |     | 60/4 /6                                 |
|--------------------------------------|-------|-------------|-----|---|
| TRANSECT 10 STATION 1 (CONT'D)       | į     | į           | ļ   | 1                                       |
| TAXON                                | 4 A C | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER              |
| TERRESTRIAL INSECT                   | 2     | 0           | 0   |   |
| DIPTERA<br>CERATOPOGONIDAE           | 0     | m           | 8   |   |
| CHIRONOMIDAE<br>ALL DIPTERA          | •     | 20          | 72  | 66 1<br>696                             |
| ACARINA                              | 0     | 0           | -   | ,                                       |
| GASTROPODA                           | -     | 8           | •   |   |
| ELIMIA LIVESCENS                     | ٥     | 0           | -   |   |
| ALL GASTROPODA                       |       |             |     | 22                                      |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIA | •     | σ           | 2   | 9                                       |
| ALL PELECYPODA                       | •     | •           | :   | , <b>4</b>                              |
|                                      |       |             |     | • |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |     |       | 5/ 4/83       |
|---------------------------------------|-----------|-----|-------|---------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 2 |           | Ş   |       | -             |
| TAXON                                 | <b>.</b>  | 5 ~ | 1 2 3 | NO./SO. METER |
| CNÍDARIA<br>HYDRA                     | <b>\$</b> | •   | 146   | 1391          |
| ALL CNIDARIA                          |           |     |       | 1391          |
| RHABDOCOELA                           | 22        | 22  | 2     | 484           |
| TRICLADIDA                            | ٥         | 0   | •     | 7             |
| NEMERTINEA                            | -         | 0   | -     | 7             |
| NEMATODA                              | 8         | 8   | 6     | 1005          |
| DLIGOCHAETA<br>Nais                   | 0         | 0   | •     |               |
| SPIROSPERMA                           | 16        | 33  | 22    |               |
| OTHER<br>ALL OLIGOCHAETA              | 506       | 195 | 90    | 5482          |
| POLYCHAETA<br>Manayumkia speciosa     | 5         | ō   | 5     | 1178          |
| ALL POLYCHAETA                        |           |     |       | 1178          |
| CLADOCERA<br>ILYOCRYPTUS              | -         | •   | -     |               |
| ALL CLADOCERA                         |           |     |       | 10            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |     |             |          | 5/ 4/83       |
|---|-----|-------------|----------|---------------|
| TRANSECT 10 STATION 2 (CONT'D)                            | æ   | GRAB COUNTS | JNTS     | ESTIMATED     |
| TAXON   | -   | 2           | 6        | NO./SQ. METER |
| ADMUS   | -   | 0           | -        |               |
| HARPACTICOIDA   | 0   | 21          | 20       |               |
| LIMMOGALANUS  | 7   | 0           | -        |               |
| ALL COPEPODA  |     |             |          | 317           |
| OSTRACODA   | -   | 0           | 0        | 1             |
| AMPHIPODA<br>GAMMARUS                                     | 46  | 5           | 16       |               |
| I   | 0   | 0           | m        |               |
| ALL AMPHIPODA   |     |             |          | 930           |
| ISOPODA   | ın  | 0           | ð        | 103           |
| ALL ISOPODA   |     |             |          | 103           |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 203 | 310         | 04       | 6591<br>86 18 |
| EPHEMEROPTERA<br>CAENIDAE<br>CLENIS                       | ~   | 6           | <b>*</b> |               |
| EPHEMERIDAE<br>Mexagenia                                  | m   | £           | -        | •             |
| EPHEMERELLIOAE<br>EPHEMERELLA                             | 0   | 0           | 8        |               |
| ALL EPHEMEROPTERA   |     |             |          | 289           |

| TAXON  TAXON  TAXON  TAXON  TAXON  TAXON  TEPTOCERIDAE  MYSTACIDES  OECETIS  ALL TRICHOPTERA  ACARINA  GASTROPODA  AMMICOLA  ELIMIA LIVESCENS  FLIMIA LIVESCENS  TAXON  TA | MACROZOOBENTHOS PONAK GRAB COUNT DATA  |      |   |     |               |
|--|--|------|---|-----|---------------|
| #FERA  | TRANSECT 10 STATION 2 (CONT'D)   | GRAB | 8 | STA | ESTIMATED     |
| AE   | TAXON  | -    | 7 | 6   | NO./SQ. METER |
| ######################################   | TRICHOPTERA  |      |   |     |               |
| CHOPTERA  ICHOPTERA  I | LEPTOCERIDAE   | -    | - | C   |               |
| 15 15 16 16 16 16 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18   | MYSTACIDES   | •    | • | •   |               |
| ICHOPTERA  ICHOPTERA  ICHOPTERA  ICHOPTERA  ICHOPTERA  ILIVESCENS  | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | -    | 0 | n   |               |
| CHOPTERA   |  |      |   |     |               |
| 0DA 0LA 0LA 0LA 197 12 72 0LA 1 LIVESCENS 12 1 4 1 0 9 1 TA TRICARINATA 1  | ALL TRICHOPTERA  |      |   |     | 5             |
| 197 12 72  IVESCENS  12 1 4  4 0 9  TRICARINATA  3 0 6  A 2 2 2 2 4  A 0 9  TRICARINATA  1 0 0  E 0 0  | ACARINA  | -    | - | 0   | <u>.</u>      |
| TRICARINATA 3 0 8 1 7 1 4 0 9 1 7 1 4 0 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | GASTROPODA   | į    | • | •   |               |
| TRICARINATA 3 0 8  | AMNICOLA   |      | 7 | 2   |               |
| 12 1 4 0 9 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | ELIMIA LIVESCEMS   | •    | - | -   |               |
| TRICARINATA 3 0 8 0000A 0000A 1 0 0  |  | •    | • | •   |               |
| TRICARINATA 3 0 8 100000000000000000000000000000000  | GYRAULUS   | Ž    | - | •   |               |
| TRICARINATA 3 0 6 11 0 6 11 0 0 0 1 0 0 0 1 1 1 1 1 1  | THE STATE OF THE S | •    | 0 | •   |               |
| TRICARIMATA DPODA AE 43 24 24 TPODA  |  | •    | • | •   |               |
| 0P00A<br>AE 43 24 24<br>1 0 0  | VALVATA TRICARINATA  | •    | • | •   |               |
| AE 43 24 24 14 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | ALL GASTROPODA   |      |   |     | 1881          |
| 43 24 24<br>1 0 0<br>YPODA   | PEL.ECYPODA<br>CEMARES I TOAF  |      |   | ,   |               |
| rpooa  | PISIOIS  | 4    | 7 | 74  | 7.29          |
| YPODA  | 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4  | -    | 0 | 0   |               |
|  | ALL PELECYPODA   |      |   |     | 634           |

| MACROZDOBENTHOS PONAR GRAB COUNT DATA |      |             |      | 5/ 4/83       |
|---------------------------------------|------|-------------|------|---------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 3 |      | GRAB COUNTS | UNTS | ESTIMATED     |
| TAXON                                 | -    | 7           | e    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 1707 | 7           | 6    | 12362         |
| ALL CNIDARIA                          |      |             |      | 12362         |
| RHABDOCOELA                           | 79   | 27          | 103  | 1439          |
| TRICLADIDA                            | ø    | 0           | -    | 48            |
| NEMERTINEA                            | 0    | 0           | 0    | 62            |
| NEMATODA                              | 1 18 | 5           | 89   | 1770          |
| OL I GOCHAETA<br>NA I S               | 16   | 0           | 0    |               |
| SPIROSPERMA                           | 216  | 6           | 23   |               |
| OTHER<br>ALL OLIGOCHAETA              | 489  | 343         | 244  | 900           |
| CLADGCERA<br>BOSMINA                  | •    | -           | 0    |               |
| ILYOCRYPTUS                           | 32   | 5           | 4    |               |
| ALL CLADOCERA                         |      |             |      | 379           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA                                    |               |             |                      | 5/ 4/83       |
|--|---------------|-------------|----------------------|---------------|
| TRANSECT 10 STATION 3 (CONT'D)   | 1400          | STAIN STAIN | 0 17                 | CATANTER      |
| TAXON  | Š –           | 3 ~         |                      | NO./SQ. METER |
| BICUSPIDATUS   | 0             | -           | 0                    | ,             |
| DIAPTOMUS  | 0             | •           | 0                    |               |
| HARPACTICOIDA  | 12            | 42          | 6                    |               |
| MACROCYCLOPS   | 0             | -           | 0                    |               |
| ALL COPEPODA   |               |             |                      | 1191          |
| OSTRACODA  | ٥             | -           | 0                    | •             |
| AMPHI PODA<br>GAMMARUS   | 9             | •           | 8                    |               |
| _  | •             | 0           | -                    |               |
|  | 0             | -           | 0                    |               |
| ALL AMPHIPODA  |               |             |                      | 989           |
| I SOPODA<br>ASELLUS  | -             | 0           | •                    | \$            |
| ALL ISOPODA  |               |             |                      | 76            |
| TERRESTRIAL INSECT   | 77            | 0           | 0                    | . #           |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONDMIDAE<br>PSYCHODIDAE<br>ALL DIPTERA | 20<br>20 00 - | 262         | 5.45<br>0.45<br>0.45 | 7624          |
|  |               |             |                      |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |     | 5/ 4/83       |
|---------------------------------------|------------|-------------|-----|---------------|
| TRANSECT 10 STATION 3 (CONT'D)        | GRAB       | GRAB COUNTS | NTS | ESTIMATED     |
| TAXON                                 | -          | 7           | 6   | NO./SQ. METER |
| 4                                     |            |             |     |               |
| CAENIDAE                              | !          | •           | (   |               |
| CAENIS                                | <u>.</u>   | 4           | ~   |               |
|                                       |            |             |     |               |
| HEXAGENIA                             | <b>e</b>   | 22          | 9   |               |
|                                       |            |             |     |               |
|                                       |            | c           | c   |               |
|                                       |            | •           | •   |               |
| ALL EPHEMEROPTERA                     |            |             |     | 489           |
| LEPIDOPTERA                           | -          | 0           | 0   | •             |
| TRICHOPTERA                           |            |             |     |               |
| LEPTOCERIDAE                          |            |             |     |               |
| OECETIS                               | -          | 6           | 7   |               |
| POLYCENTEDPOOLDAF                     |            |             |     |               |
| NEURECLIPSIS                          | <b>8</b> D | 0           | 0   |               |
|                                       |            |             |     | ;             |
| ALL TRICHOPTERA                       |            |             |     | 76            |
| DDONATA<br>CREMACABITANIO A E         | •          | c           | c   | •             |
|                                       | -          | >           | >   | •             |
| ACARINA                               | មា         | 0           | 8   | 897           |
| 148010840                             | c          | -           | c   | •             |

| MACKUZUUBENINUS PUNAK UKAB COONI UKIR   |          |             |     | •             |
|---|----------|-------------|-----|---------------|
| TRANSECT 10 STATION 3 (CONT'D)          | GRA      | GRAB COUNTS | NTS | ESTIMATED     |
| TAXON                                   | -        | ~           | 6   | NO./SQ. METER |
| GASTROPODA                              | ,        |             |     | •             |
| AMNICOLA                                | 4        | 22          | 36  |               |
|   | 0        | 0           | ო   |               |
|   |          |             |     |               |
|   | <b>5</b> | -           | 7   |               |
| 1 1 1 1 1 1 1 1                         | •        | •           | •   |               |
| PHYSA                                   | •        | -           | -   |               |
|   |          |             |     | 124K          |
| ALL GASTROPODA                          |          |             |     | ?             |
| PELECYPODA                              |          |             |     |               |
| SPHAERIIDAE                             | :        | ;           | į   |               |
| PISIDIUM                                | ₽        | =           | 0   |               |
| • |          | •           | •   |               |
| SPHAERIUM                               | 22       | 0           | -   |               |
|   |          |             |     | 5             |
| ALL SPHAERIIDAE                         |          |             |     | 8 6           |
| ALL PELECYPODA                          |          |             |     | )             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |       |     | 5/ 5/83       |
|---------------------------------------|-----------|-------|-----|---------------|
| LAKE ST. CLAIR TRANSECT 11 STATION 1  | S         | 9     | U E | 2000          |
| TAXON                                 | ž         | 4 2 3 | 20  | NO./SQ. METER |
| RHABDOCOELA                           | 0         | -     | 0   | 7             |
| NEMATODA                              | 73        | 89    | 13  | 1061          |
| HIRUDINEA<br>GLOSSIPHONIIDAE          |           |       |     |               |
| HELOBDELLA ELONGATA                   | -         | 0     | 0   |               |
|                                       | 0         | 6     | ٥   |               |
| PLACOBDELLA MONTIFERA                 | 0         | 0     | -   |               |
| ALL HIRUDINEA                         |           |       |     | 34            |
| OLIGOCHAETA<br>SPIROSPERMA            | -         | -     | 0   |               |
| OTHER<br>ALL OLIGOCHAETA              | 38        | 41    | 36  | 428           |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA     | <b>58</b> | 5     | ın  | 337           |
| AETA                                  |           |       |     | 337           |
| CLADGCERA<br>ILYOCRYPTUS              | 8         | 0     | -   | 21            |
| ALL CLADOCERA                         |           |       |     | 24            |
| COPEPODA<br>Harpacticoida             | ø         | 71    | 0   | 3C<br>SC      |
| ALL COPEPODA                          |           |       |     | 10<br>10      |
| OSTRACODA                             | -         | ო     | 0   | 28            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |          |       |                       | 5/ 5/83       |
|---|----------|-------|-----------------------|---------------|
| TRANSECT 11 STATION 1 (CONT'D)                  | Age      | 2     | Ž                     | ESTIMATED     |
| TAXON   | _        | 1 2 3 | . 60                  | NO./SQ. METER |
| S   | 0        | -     | !<br>! <b>60</b><br>! | 62            |
| ALL AMPHIPODA                                   |          |       |                       | 62            |
| TERRESTRIAL INSECT                              | 0        | -     | 0                     | 1             |
| DIPTERA<br>CHIRONOMIDAE                         | 28       | 98    | 56                    | 1129          |
| EPHEMEROPT ERA<br>EPHEMERIDAE<br>HEXAGENIA      | <b>4</b> | 26    | 4                     |               |
| EPHEMERELLIDAE<br>EPHEMERELLA                   | 0        | 0     | -                     |               |
| ALL EPHEMEROPTERA                               |          |       |                       | 1005          |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | ٥        | •     |                       |               |
| LEPTOCERIDAE<br>OECETIS                         | -        | ស     | 0                     |               |
| ALL TRICHOPTERA                                 |          |       |                       | 84            |
| ACARINA   | 0        | -     | 0                     | 7             |
| GASTROPODA<br>Amnicola                          | -        | 0     | 0                     | ٢             |
| ALL GASTROPODA                                  |          |       |                       | 1             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |      |             |             | 5/ 5/83   |
|---|------|-------------|-------------|---|
| TRANSECT 11 STATION 1 (CONT'D)          | 85   | GRAB COUNTS | STNI        | FSTTMATED   |
|   |      | 1 2 3       | 6           | NO./SQ. METER   |
| PELECYPODA                              | <br> | !<br>!<br>! | !<br>!<br>! | }<br>}<br>6<br>6<br>6<br>6<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| SPHAERIIDAE                             |      |             |             |   |
| PISIDIUM                                | 8    | 16          | 4           |   |
| * |      |             |             |   |
| SPHAERIUM                               | 0    | -           | 0           |   |
|   |      |             |             |   |
| ALL SPHAERIIDAE                         |      |             |             | 282   |
| UNIONIDAE                               |      |             |             |   |
| LAMPSILIS RADIATA SILIQUOIDEA           | 0    | 0           | -           |   |
|   |      |             |             |   |
| OTHER                                   | 0    | -           | 0           |   |
| ALL PELECYPODA                          |      |             |             | 296   |
|   |      |             |             |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                         |      |             |           | 5/ 5/83                    |
|---|------|-------------|-----------|----------------------------|
| ¥   | GRA- | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA   | -    | 6           | 7         | 41                         |
| NEMA TODA   | 94   | 86          | 233       | 2927                       |
| GLOSSIPHONIDAE<br>GLOSSIPHONIDAE<br>PLACOBDELLA MONTIFERA<br> | •    | -           | •         | ^                          |
| OLIGOCHAETA<br>Nais   | 0    | 0           | *         |                            |
| SPIROSPERMA   | 0    | -           | 0         |                            |
| OTHER<br>ALL DLIGOCHAETA                                      | 8    | <b>4</b>    | 1 18      | 1543                       |
| POLYCHAETA MANAYUWKIA SPECIOSA                                | o    | 4           | 6         | 220                        |
| ALL POLYCHAETA  |      |             |           | 220                        |
| CLADOCERA<br>DAPI-NIA   | 0    | ٥           | -         |                            |
| ILYOCRYPTUS   | -    | 0           | m         |                            |
| ALL CLADOCERA   |      |             |           | . 76                       |
| COPEPODA<br>DIAPTOMUS   | -    | 0           | n         |                            |
| HARPACTICOIDA   | 0    | ស           | 24        |                            |
| LIMOCALANUS   | 0    | 8           | 8         |                            |
| MESOCYCLOPS   | 0    | 0           | -         |                            |
| ALL COPEPODA  |      |             |           | 262                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                      |      |               |      | 5/ 8/83       |
|--|------|---------------|------|---------------|
| TRANSECT 11 STATION 2 (CONT'D)                             | GRAB | GRAB COUNTS   | 2 TS | ESTIMATED     |
| TAXON  | -    | 8             | 6    | NO./SQ. METER |
| OSTRACODA  | 0    | 4             | 9    | 69            |
| AMPHI PODA<br>Gammarus                                     | -    | 4             | ហ    | 69            |
| ALL AMPHIPODA  |      |               |      | 69            |
| DIPTERA  | 34   | <b>4</b><br>ռ | 68   | 1012          |
| EPHEMEROPTERA<br>Ephemeridae<br>Hexagenia                  | 47   | 99            | 69   |               |
| ALL EPHEMEROPTERA  |      |               |      | 1205          |
| LEPTOCERIDAE<br>LEPTOCERIDAE<br>OECETIS<br>ALL TRICHOPTERA | •    | 10            | ٥    | <b>4</b> 6    |
| ACARINA  | -    | m             | -    | 8             |
| GASTROPODA<br>AMMICOLA<br>ALL GASTROPODA                   | -    | 0             | 0    | ۲ ۲           |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                      | 11   | <b>5</b>      | 6    |               |
| SPHAERIUM  | 8    | 0             | -    |               |
| ALL SPHAERIIDAE<br>ALL PELECYPODA                          |      |               |      | 58 S          |
|  |      |               |      |               |

| TRANSECT 11 STATION 3  GRAB COUNTS 1 2 3 3 LONGATA  O 4 0 3 4 0 39 103 96 0 2 0 30 2 0 30 345 461 TA  PECIOSA  A 11 15 A A 37 6 32   | MACROZOOBENTHOS PONAR GRAB COUNT DATA                                    |          |                |          | 5/ 5/83                    |
|--|--|----------|----------------|----------|----------------------------|
| I   I   I   I   I   I   I   I   I   I  |  | GRA-     | 80<br>20<br>20 | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| IIDAE  | PORIFERA<br>SPONGILLA  | •        | •              | 0        | + (                        |
| DNIIDAE  LLA ELONGATA  DINEA  TA  TA  CHAETA  DNIIDAE  0 3 2  0 2 0  330 345 461  7  A 11 15  CHAETA  2 0 0  PPTUS  19 103 96 11  2 0 0  10 2 0  2 0 0  10 2 0  2 0 0  10 2 0  | ALL PORIFERA<br>Rhabdocdela  | 8        | 0              | •        | o <b>‡</b>                 |
| DNIIDAE LLA ELONGATA  DINEA  TA  TA  CHAETA  A  KIA SPECIOSA  CHAETA  2 0 0  7 11 15  7 2 0 0  FPTUS  PPTUS  | NEMATODA   | 38       | 103            | 96       | 1639                       |
| MA SPECIOSA 44 11 15 A SPECIOSA 45 11 15 A SPECIOSA 44 11 15 A SPECIOSA A SPECIOSA 44 11 15 A SPECIOSA A SPECIOSA 44 11 15 A SPECIOSA A S | ALOSSIPHONIDAE<br>ALOSSIPHONIDAE<br>HELOBDELLA ELONGATA<br>ALL HIRUDINEA | •        | m              | 6        | 4                          |
| CHAETA  IA SPECIOSA  44 11 15  | OLIGOCHAETA<br>Spirosperma   | 0        | 8              | 0        |                            |
| 1A SPECIOSA 44 11 15   | OTHER<br>ALL OLIGOCHAETA   | 330      | 348            | 461      | 7837                       |
| 2 0 0 PTUS 37 6 32   | POLYCHAETA MANAYUNKIA SPECIOSA   | <b>1</b> | =              |          | <b>4 48</b> 2              |
| 37 6 32  | CLADOCERA<br>DAPHNIA   | 8        | 0              | 0        |                            |
|  | ILYOCRYPTUS<br>  | 31       | ø              | 35       | 830                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |     | 5/ 5/83       |
|---------------------------------------|------|-------------|-----|---------------|
| TRANSECT 11 STATION 3 (CONT'D)        | GRAE | GRAB COUNTS | NTS | ESTIMATED     |
| TAXDN                                 | -    | ~           | 6   | NO./SQ. METER |
| Agrara                                | 0    | 0           | -   |               |
|                                       | ,    |             | . , |               |
| DIAPTOMUS                             | 0    | N           | 0   |               |
| HARPACTICOIDA                         | 0    | 0           | 8   |               |
|                                       | •    | 0           | 4   |               |
|                                       | •    | •           | •   |               |
| MACROCYCLOPS                          | 4    | 8           | 0   |               |
| ALL COPEPODA                          |      |             |     | 131           |
| OSTRACODA                             | -    | 0           | 8   | 22            |
| AMPHIPODA                             | •    | c           | •   | č             |
|                                       | •    |             | •   | 2             |
| ALL AMPHIPODA                         |      |             |     | <b>58</b>     |
| TERRESTRIAL INSECT                    | 0    | 0           | -   | •             |
| DIPTERA<br>CHIROMONIDAE               | 46   | 27          | 88  | 606           |
| EPHEMEROPTERA                         |      |             |     |               |
| CAENIDAE<br>CAENIS                    | 0    | 0           | -   |               |
|                                       |      |             |     |               |
| HEXAGENIA                             | 8    | 38          | 28  |               |
| ALL EPHEMEROPTERA                     |      |             |     | 1019          |
| ACARINA                               | 7    | 0           | -   | 21            |
|                                       |      |             |     |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |             |     | 5/ 5/83       |
|---|-----|-------------|-----|---------------|
| TRANSECT 11 STATION 3 (CONT'D)          | GRA | GRAB COUNTS | MTS | ESTIMATED     |
| TAXON                                   | -   | 1 2 3       | 6   | NO./SQ. METER |
| PELECYPODA                              |     |             |     |               |
| SPHAERIDAE                              |     | ,           |     |               |
| PISIDIUM                                | 93  | 22          | 4   |               |
| 611660                                  |     |             |     |               |
| SPHAERIUM                               | ~   | 1           | Ē.  |               |
| *************************************** |     |             |     |               |
| ALL SPHAERIIDAE                         |     |             |     | 040           |
| ALL PELECYPODA                          |     |             |     | 040           |

|   |   |            |             |     | 60/1                                  |
|---|---|------------|-------------|-----|---------------------------------------|
| LAKE ST. CLAIR  | TRANSECT 12 STATION 1   | a          | SPAR COMMTS | Z T | FOTTMATES                             |
| TAXON   | ;   | <b>}</b> _ | 5<br>8      | 0   | NO./SQ. METER                         |
| CNIDARIA<br>HYDRA   | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 0          | ٥           | -   | · · · · · · · · · · · · · · · · · · · |
| ALL CNIDARIA  |   |            |             |     | ٢                                     |
| RHABDOCOELA   |   | -          | <b>-</b>    | -   | ž                                     |
| NEMATODA  |   | 25         | 58          | 11  | 489                                   |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA STAGNALIS<br>ALL HIRUDINEA | LIS   | •          | ٥           | -   |                                       |
| OL I GOCHAETA<br>SPIROSPERMA  |   | 4          | ٥           | 0   |                                       |
| OTHER<br>ALL OLIGOCHAETA  |   | 27         | 93          | 5   | 908                                   |
| POLYCHAETA MANAYUNKIA SPECIOSA  | VS.   | 87         | 146         | 7   | 2080                                  |
| CLADOCERA<br>BOSMINA<br>AL'. CLADOCERA                                |   | -          | 0           | 0   |                                       |
| COPEPODA CYCLOPS BICUSPIDATUS   | tus   | •          | -           | 0   |                                       |
| HARPACTICOIDA   | :<br>:  | 4          | 7           | 0   |                                       |
| LIMOCALANUS   |   | -          | -           | -   |                                       |
| ALL COPEPODA  |   |            |             |     | 165                                   |

| TRANSECT 12 STATION 1 (CONT'D)  TRANSCON  TAXON  TAXON  TAXON  GRAB COUNTS ESTIMATED  GRAB COUNTS (ST. METE  GSTRACODA  GAMMARUS  ALL AMPHIPODA  GAMMARUS  G | MACACCODENINS FUNAR GRAB COUNT DATA      |              |            |          | 5/ 4/83                    |
|--|--|--------------|------------|----------|----------------------------|
| THE SCENS   | 12 STATION 1                             |              | į          | !        |                            |
| FRACILIS  FODA  16 5 25  16 5 25  16 5 25  17 6 5 25  18 6 60 42  19 60 42  19 60 42  19 60 42  19 60 42  19 60 42  19 60 60 60 42  19 60 60 60 42  19 60 60 60 42  19 60 60 60  19 60 60 60  19 60 60 60  19 60 60 60  19 60 60 60  10 60 60 6 | TAXON                                    | ğ -          | 7 7 7 8 CG | STS<br>3 | ESTIMATED<br>NO./SQ. METER |
| FODA  DAE  ERA  A  ERA  A  EROPTERA  1 0 0  1 1 0  1 13  WHITDAE  FRAGILIS  FOODA  1 0 0  1 1 0  1 1 13  WHITDAE  FRAGILIS  FOODA  FOOD | OSTRACODA                                | 9            | 60         | -        | 103                        |
| FODA  ERA  ERA  A  ERA  EROPTERA  1 0 0 1  VESCENS  1 0 0 1  TRICARINATA  M  ERITORE  FRAGILIS  FOODA  1 0 0  1 1 13  M  ERITORE  FRAGILIS  FOODA  1 0 0  1  | AMPHIPODA                                |              |            |          |                            |
| PODA  DAE  ERA  A  ERA  A  EROPTERA  1 0 0  1 1 0 0  1 1 0 0  1 0 0 1  1 0 0 1  1 0 0 1  1 0 0 1  1 0 0 1  1 0 0 0  1 0 0 1  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0  1 0 0  | GARMARUS                                 | 9            | ED.        | 52       | 317                        |
| ERA  ERA  EROPTERA  1 0 0  1 0 | ALL AMPHIPODA                            |              |            |          | 317                        |
| ERA AE   | DIPTERA<br>CHIRONOMIDAE                  | 8            | 8          | 4        | 1047                       |
| #EROPTERA  | EPHEMEROPTERA                            |              |            |          |                            |
| EROPTERA 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 1 1   | EPHEMER (DAE<br>HEXAGENIA                | 25           | 20         | 16       |                            |
| 1 0 0 1  | ALL EPHEMEROPTERA                        |              |            |          | 420                        |
| VESCENS  | ACARINA                                  | ••           | ٥          | ٥        | ٠                          |
| TRICARINATA  OPODA  ERIDAE  FRAGILIS  OPODA  | GASTROPODA<br>Amnicola                   | «            | •          | Œ        |                            |
| RA ACUTA  TRICARINATA  1 0 0  TRICARINATA  1 0 0  DPODA  ERILDAE  FRAGILIS  1 0 0  | EL LE L | • •          | •          | , -      |                            |
| RA ACUTA  TRICARINATA  OPODDA  ERIIDAE  FRAGILIS  TRICARINATA  1 0 0  15 11 13  0 1 0  1 0 0  1 0 0 0  |  | •            | •          | •        |                            |
| TRICARINATA 1 0 7 0  TRICARINATA 1 0 0  OPODA  ERIDAE  FRAGILIS 1 0 0  | GYRAULUS                                 | 0            | 0          | ~        |                            |
| TRICARINATA 1 0 0  OPODA  AE  IS 11 13  M  ERIIDAE  FRAGILIS 1 0 0   | PLEUROCERA ACUTA                         | 0            | 7          | 0        |                            |
| AE 15 11 13 M 0 1 0 ERIDAE 1 0 0   | VALVATA TRICARINATA                      | -            | 0          | 0        |                            |
| AE 15 11 13  M 0 1 0  ERIDAE 1 0 0   | ALL GASTROPODA                           |              |            |          | 200                        |
| 10   10   10   10   10   10   10   10  | PELECYPODA                               |              |            |          |                            |
| AERIUM 0 1 0 1 0 SPHAERIUME 0 1 0 1 0 NIDAE NIDAE 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | PISIDION                                 | <del>5</del> | Ξ          | 13       |                            |
| SPHAERIDAE NIDAE TODEA FRAGILIS 1 0 0  | SPHAERIUM                                | 0            | -          | 0        |                            |
| NIDAE<br>TODEA FRAGILIS 1 0 0  | ALL SPHAERIIDAE                          |              |            |          | 275                        |
|  |  | -            | 0          | 0        |                            |
|  |  |              |            |          |                            |

| MACKUSUUSENINUS PUMAK GRAB COUNI DAIA | GRAD COOM! DAIA       |         |             |            | 70/4 /07      |
|---------------------------------------|-----------------------|---------|-------------|------------|---------------|
| LAKE ST. CLAIR TRA                    | TRANSECT 12 STATION 2 | S V G C | STAISS BAGS | 2          | CETTANTES     |
| TAXON                                 |                       | -       | 3 ~         | n en       | NO./SO. METER |
| CNIDARIA<br>HYDRA                     |                       | LD.     | 0           | •          | 34            |
| ALL CNIDARIA                          |                       |         |             |            | 34            |
| NEMATODA                              |                       | 35      | 5           | 27         | 778           |
| OLIGOCHAETA                           |                       | 22      | 27          | 23         | 486           |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA     |                       | 0       | а           | <b>æ</b>   | 145           |
| ALL POLYCHAETA                        |                       |         |             |            | 145           |
| COPEPODA<br>DIAPTOMUS                 |                       | •       | -           | 0          |               |
| HARPACTICOIDA                         |                       | 0       | 9           | m          |               |
| LIMOCALANUS                           |                       | -       | 0           | 0          |               |
| MACROCYCLOPS                          |                       | 0       | 0           | -          |               |
| ALL COPEPODA                          |                       |         |             |            | 6             |
| OSTRACODA                             |                       | 0       | •           | <b>s</b> n | 6             |
| GAMMARUS ALL AMPHIPODA                |                       | 8       | ø           | 5          | 262<br>262    |
| DIPTERA                               |                       |         |             | 27         |               |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |                |              |            | 5/ 4/83                 |
|---------------------------------------|----------------|--------------|------------|-------------------------|
| TRANSECT 12 STATION 2 (CONT'D) TAXON  | GRA            | GRAB COUNTS  | NTS        | ESTIMATED               |
|                                       | . !            | . [          | , !        |                         |
| EPHEMERUPIERA<br>FDHFMFRIOAF          |                |              |            |                         |
| HEXAGENIA                             | 23             | 90           | <b>5</b> 6 |                         |
| ALL EPHEMEROPTERA                     |                |              |            | 844                     |
| TOTAL                                 |                |              |            | •                       |
| LEDIOCERIOAF                          |                |              |            |                         |
| OECETIS                               | <b>s</b> o     | 0            | ın         |                         |
| ALL TRICHOPTERA                       |                |              |            | 89                      |
| ACARINA                               | 8              | 8            | 0          | 28                      |
| GASTROPODA                            |                |              |            |                         |
| AMNICOLA                              |                | 0            | -          |                         |
| PHYSA                                 | -              | 0            | 0          |                         |
| PLEUROCERA ACUTA                      | -              | 0            | -          |                         |
| ALL GASTROPODA                        |                |              |            | 62                      |
| PELECYPODA                            |                |              |            |                         |
| SPHAERI IDAE                          |                |              |            |                         |
| PISIDICE                              | <del>1</del> 3 | <del>0</del> | 9          |                         |
| SPHAERIUM                             | -              | 8            | -          |                         |
|                                       |                |              |            |                         |
| ALL SPHAERIIDAE<br>ALL PELECYPODA     |                |              |            | 80 80<br>00 00<br>00 00 |

| TAXON   1  |  |              |     |           |               |
|--|--|--------------|-----|-----------|---------------|
| 11DAE  A ELONGATA  A STAGNALIS  A SPECIOSA  A SPECIOSA  B 13 B  A T 1 21  US  LS  A T 1 21  ERA  | TRANSECT 12 STATION  | 9400         | Ş   | 110       | CAPANTER      |
| 11DAE<br>A ELONGATA<br>A STAGNALIS<br>A STAGNALIS<br>A SPECIOSA<br>A SPECIOSA<br>A SPECIOSA<br>A SPECIOSA<br>B 13 8<br>1 2 0<br>1 2 0<br>1 2 1<br>1 2 0<br>1 2 1<br>1 2 0  | 5  | <b>8</b> - ' | 3 % | n (n<br>E | NO./SO. METER |
| 11DAE A ELONGATA A STAGNALIS A STAGNALIS A SPECIOSA A SPECIOSA A SPECIOSA A SPECIOSA A SPECIOSA A SPECIOSA B 13 8 C C C C C C C C C C C C C C C C C C C  | 5<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 7            | -   | 7         | 34            |
| IDAE   | NEMATODA   | 8            | 17  | 92        | 1329          |
| A SPECIOSA  SPECIOSA  SPECIOSA  SPECIOSA  SPECIOSA  SPECIOSA  The specio | HIRUDINEA<br>GLOSSIPHONIDAE  |              |     |           |               |
| A SPECIOSA  A SPECIOSA  B 13 B  AETA  1 2 0  US  47 1 21   | HELOBDELLA ELONGATA  | -            | 0   | 0         |               |
| NEA  SPECIOSA  9 13 8  AETA  1 2 0  US  47 1 21  | HELOBDELLA STAGNALIS   | 7            | 0   | 0         |               |
| 372 93 460 A SPECIOSA 8 13 8 AETA  1 2 0 US 47 1 21  | ALL HIRUDINEA  |              |     |           | 21            |
| MIA SPECIOSA 8 13 8 CHAETA 8 13 8 13 8 14 1 2 0 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1  | OL I GOCHAETA  | 372          | 6   | 460       | 6370          |
| CHAETA 1 2 0 PTUS 47 1 21 OCERA  | POLYCHAETA<br>MANAYUNKIA SPECIOSA  | •            | 5   | •         | 207           |
| 1 2 0<br>PTUS 47 1 21<br>OCERA   | ALL POLYCHAETA   |              |     |           | 207           |
| 47 1 21  | CLADOCERA DAPHNIA  | -            | a   | 0         |               |
|  | ILYOCRYPTUS  | 47           | -   | 2         |               |
|  | ALL CLADOCERA  |              |     |           | 486           |

| TRANSECT 12 STATION 3 (CONT'D) TAXON      |          |             |    |               |
|---|----------|-------------|----|---------------|
| TAXON                                     | GRAB     | GRAB COUNTS | Ŋ  | ESTIMATED     |
|   | -        | 8           |    | NO./SO. METER |
| COPEPODA                                  | ,        |             |    |               |
| CYCLOPOIDIDAE                             | 0        | 0           | -  |               |
|   | 8        | •           | 0  |               |
| CYCLODA VEDNALTA                          | -        | 0           | 0  |               |
|   |          | 1           |    |               |
| -   | 60       | -           | 0  |               |
| HARPACTICOIDA                             | •        | 0           | 0  |               |
|   |          |             | •  |               |
| LIMNOCALANUS                              | -        | 9           | 0  |               |
| MACROCYCLOPS                              | 0        | 0           | -  |               |
|   | •        |             | •  |               |
| MESOCYCLOPS                               | 0        | -           | 0  |               |
| ALL COPEPODA                              |          |             |    | 165           |
| OSTRACODA                                 | ю        | 0           | 5  | 8             |
| AMPHIPODA                                 | •        | •           | 4  | 117           |
| GAMMANUS                                  | •        | ,           | ,  | •             |
| ALL AMPHIPODA                             |          |             |    | 117           |
| TERRESTRIAL INSECT                        | -        | -           | 0  | <b>:</b>      |
| DIPTERA<br>CHIRONOMIDAE                   | 79       | 32          | 38 | 653           |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA | <b>5</b> | 36          | 23 |               |
| ALL EPHEMEROPTERA                         |          |             |    | 585           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |             |          | 5/ 5/83                    |
|---------------------------------------|-----------|-------------|----------|----------------------------|
| TRANSECT 12 STATION 3 (CONT'D) TAXON  | GRAI<br>- | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| ACARINA 0 2 1 21                      | 0         | 0 2         | -        | 21                         |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | ē         | 9           | 9        | 1150                       |
| ALL PELECYPODA                        |           |             |          | 1150                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | נפ כחסתו השוש         |     |             |            | :                       |
|---------------------------------------|-----------------------|-----|-------------|------------|-------------------------|
| . CLAIR                               | TRANSECT 13 STATION 1 | GRA | GRAB COUNTS | STNL       | ESTIMATED NO./SO. METER |
| TAXON                                 | 7                     | -   | • [         | ,          | ,                       |
| CNIDARIA<br>HYDRA                     |                       | 0   | -           | 0          | •                       |
| ALL CNIDARIA                          |                       |     |             |            | 1                       |
| RHABDOCOELA                           |                       | 7   | ю           | 69         | 96                      |
| NEMATODA                              |                       | ç   | 21          | <b>3</b> 6 | 434                     |
| OLIGOCHAETA<br>Spirosperma            |                       | -   | -           | 7          |                         |
| OTHER<br>ALL DLIGOCHAETA              |                       | Ø   | o o         | 8          | 275                     |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA     |                       | 5   | 40          | 30         | 1136                    |
| ALL POLYCHAETA                        |                       |     |             |            | 1136                    |
| CLADOCERA<br>CHYDORUS                 |                       | 0   | -           | 0          |                         |
| DAPHNIA                               |                       | 0   | -           | 0          |                         |
| ALL CLADOCERA                         |                       |     |             |            | <u> </u>                |
| COPEPODA<br>HARPACTICOIDA             |                       | 0   | 7           | ~          |                         |
| TANDCALANUS                           |                       | 0   | 0           | -          |                         |
| AL COPEDOA                            |                       |     |             |            | 62                      |
| OFTB CODA                             |                       | 0   | 7           | -          | 21                      |
|                                       |                       |     |             |            |                         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |          |             |          | 5/ 4/83                    |
|---|----------|-------------|----------|----------------------------|
| TRANSECT 13 STATION 1 (CONT'D) TAXON                      | GR/      | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| AMPHI PODA<br>Gammarus                                    | <b>*</b> | 11          | 60       | 269                        |
| ALL AMPHIPODA   |          |             |          | 269                        |
| DIPTERA<br>CHIRONOMIDAE                                   | <b>‡</b> | 3           | 20       | 475                        |
| EPHEMEROPTERA<br>Ephemeridae<br>Hexagenia                 | 2        | 58          | 23<br>28 |                            |
| ALL EPHEMEROPTERA   |          |             |          | 475                        |
| TRICHOPTERA<br>LEPTOCERIDAE<br>DECETIS<br>ALL TRICHOPTERA | -        | п           | m        | 7                          |
| ACARINA   | -        | 0           | -        | <b>2</b>                   |
| GASTROPODA<br>Amnicola                                    | 0        | 8           | 0        |                            |
| ELIMIA LIVESCENS  | -        | 8           | 0        |                            |
| GYRAULUS  | 0        | *           | 0        |                            |
| ALL GASTROPODA  |          |             |          | 62                         |
| SPHAERI IDAE  | ,        | ;           | •        |                            |
| MOIOISIA  | 2        | 97          | 73       |                            |
| SPHAERIUM   | -        | 0           | 0        |                            |
| ALL SPHAERI IDAE  |          |             |          | 289                        |
| RADIATA   | -        | 0           | 0        |                            |
| ALL PELECYPODA  |          |             |          | 296                        |

| LAKE ST. CLAIR TRANSECT 13 STATION 2                                 |          |                      | •  |               |
|--|----------|----------------------|----|---------------|
|  | GRA<br>- | GRAB COUNTS<br>1 2 3 | 38 | NO./SQ. METER |
| PORIFERA   | 0        | 0                    | +  | •             |
| ALL PORIFERA   |          |                      |    | 0             |
| CNIDARIA<br>Hydra  | ٥        | 136                  | ٥  | 937           |
| ALL CNIDARIA   |          |                      |    | 937           |
| RHABDOCOELA  | 0        | -                    | 0  | 7             |
| NEMERTINEA   | 0        | က                    | 0  | 12            |
| NEMÁTODA   | 43       | 114                  | 36 | 3374          |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>HELOBDELLA STAGNALIS<br>ALL'HIRUDINEA | -        | -                    | 0  | 2             |
| OLIGOCHAETA<br>Spirosperma   | 0        | က                    | 0  |               |
| OTHER<br>ALL OLIGOCHAETA   | 8        | 91                   | 31 | 1308          |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA                                    | Ξ        | 9                    | 4  | 516           |
| ALL POLYCHAETA   |          |                      |    | 916           |

B-117

1

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |           |                      |     | 5/ 4/83           |
|---|-----------|----------------------|-----|-------------------|
| TRANSECT 13 STATION 2 (CONT'D)                            | į         | Š                    |     |                   |
| TAXON   | - 68      | GRAB COUNTS<br>1 2 3 | 2 M | NO./SQ. METER     |
| COPEPODA<br>CYCLOPOIDIDAE                                 | -         | 6                    | ٥   |                   |
| DIAPTOMUS   | 0         | ~                    | 0   |                   |
| HARPACTICOIDA   | <b>36</b> | 4                    | -   |                   |
| LIMNOCALANUS  | 0         | 8                    | -   |                   |
| MACROCYCLOPS  | -         | 0                    | 0   |                   |
| ALL COPEPODA  |           |                      |     | 282               |
| OSTRACODA   | •         | •                    | 0   | 52                |
| AMPHI PODA<br>GAMMARUS                                    | М         | 62                   | 50  | 58<br>53          |
| ALL AMPHIPODA   |           |                      |     | 585               |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIROMOMIDAE<br>ALL DIPTERA | <b>○ </b> | - •                  | 90  | 569<br>502<br>502 |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA                 | . 4       | <b>6</b>             | 9   |                   |
| BAETISCIDAE<br>BAETISCA                                   | •         | -                    | 0   |                   |
| ALL EPHEMEROPTERA   |           |                      |     | . 904             |

| TRANSECT 13 STATION 2 (CONT'D)                  | 6         | Š     | į    | *************************************** |
|---|-----------|-------|------|---|
| TAXON   | - C       | 1 2 3 | 2 60 | NO./SO. METER                           |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | 0         | 5     | ٥    |   |
| LEPTOCERIDAE<br>MYSTACIDES                      | 0         | -     | 0    |   |
| OECETIS   | 7         | 0     | 0    |   |
| ALL TRICHOPTERA                                 |           |       |      | 145                                     |
| ACARINA   | -         | -     | 0    | 41                                      |
| GASTROPODA<br>Amnicola                          | un        | 0     | 0    |   |
| BITHWIA   | 0         | 0     | -    |   |
|   | 0         | 0     | -    |   |
| ALL GASTROPODA                                  |           |       |      | 48                                      |
| PELECYPODA                                      |           |       |      |   |
| PISIDIUM  | <b>58</b> | 4     | 12   |   |
| SPHAERIUM                                       | -         | 0     | 0    |   |
| ALL SPHAERIIDAE<br>UNIONIDAE<br>ALL PELECYPODA  | -         | 0     | 0    | 379 ·                                   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA         |            |             |           | 5/ 4/83                    |
|---|------------|-------------|-----------|----------------------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 3<br>TAXON | GRA<br>-   | GRAB COUNTS | STNU<br>3 | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                                   | 0          | 6           | 0         | 21                         |
| NEMERTINEA                                    | 0          | 0           | -         | 7                          |
| NEMATODA                                      | 36         | 47          | 89        | 1040                       |
| IDAE<br>STA                                   | •          | 0           | +         |                            |
| ALL HIRUDINEA                                 |            |             |           | •                          |
| OLIGOCHAETA                                   | 255        | φ           | 217       | 3292                       |
|   | •          | 38          | 0         | 262                        |
| ALL POLYCHAETA                                |            |             |           | 262                        |
| CLADOCERA<br>ILYOCRYPTUS                      | <b>1</b> 0 | 8           | m         | 89                         |
| ALL CLADCEDA                                  |            |             |           | 8                          |

| MACRUSUUDENITUS PUNAN GRAD CUUNI DAIA |                  |              |          | 5/ 4/83   |
|---------------------------------------|------------------|--------------|----------|---|
| TRANSECT 13 STATION 3 (CONT'D)        |                  | į            |          |   |
|                                       |                  | GRAB COUNTS  | S E      | ESTIMATED<br>NO./SQ. METER  |
| COPEPODA                              | !<br>?<br>!<br>! | !            |          | 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 |
| CYCLOPOIDIDAE                         | 0                | ო            | ٥        |   |
| CYCLOPS BICUSPIDATUS                  | 0                | 0            | -        |   |
|                                       |                  |              |          |   |
| DIAPIONUS                             | -                | ~            | 0        |   |
| HARPACTICOIDA                         | 6                | 6            | 4        |   |
|                                       |                  | •            | •        |   |
| LIMNOCALANUS                          | -                | 0            | 0        |   |
| MACODOCYCLODS                         | c                | C            | •        |   |
|                                       | )                | •            | -        |   |
| MESOCYCLOPS                           | -                | 0            | 0        |   |
|                                       |                  |              |          |   |
| ALL COPEPODA                          |                  |              |          | 138   |
| OSTRACODA                             | -                | 8            | m        | 4   |
| AMPHIPODA                             |                  |              |          |   |
| GAMMARUS                              | -                | -            | 7        | 62  |
| ALL AMPHIPODA                         |                  |              |          | 62  |
| DIPTERA                               | į                | !            | ,        | !   |
| CHIRONOMIDAE                          | 74               | <del>-</del> | <b>6</b> | 1295  |
| EPHEMEROPTERA                         |                  |              |          | ٠   |
| EPHEMERIDAE                           | ļ                |              |          |   |
| HEXAGENIA                             | 32               | <b>78</b>    | ę.       |   |
| ALL EPHEMEROPTERA                     |                  |              |          | 764   |
| TRICHOPTERA                           |                  |              |          |   |
| LEPTOCERIDAE                          |                  |              |          |   |
| DECETIS                               | -                | 4            | 8        |   |
| ALL TRICHOPTERA                       |                  |              |          | 48  |
| ACARINA                               | ~                | -            | 8        | <b>8</b>  |
|                                       |                  |              |          |   |

| TRANSECT 13 STATION 3 (CONT'D)  TAXON  TAXON  GARB COUNTS ESTIMATED  1 2 3 NO./SQ. METER  GASTROPODA  PLEUROCERA ACUTA  ALL GASTROPODA  SPHAERILDAE  PISIDIUM  ALL SPHAERILDAE  296   | MACKUZUOBENTHOS PONAR GRAB COUNT DATA   |            |             |      | 5/ 4/83  |
|---|---|------------|-------------|------|--|
| GRAB COUNTS 1 2 3 h 2 4 counts 2 5 6 6 1 counts 4 counts 4 counts 6 counts 6 counts 6 counts 6 counts 7 counts 7 counts 6 counts 7 counts | TRANSECT 13 STATION 3 (CONT'D)          |            |             |      | •  |
| RA ACUTA 0 0 1 DPODA  AE 26 0 10 FRIDAE   | TAXON                                   | GRA -      | 8<br>0<br>0 | UNTS | ESTIMATED AND AND AND AND AND AND AND AND AND AN |
| DPODA  AE  26 0 10  1811DAE   |   |            |             | i    |  |
| AE 26 0 10 10 10 10 10 10 10 10 10 10 10 10 1   | ALL GASTEDDOOM                          | •          | 0           | -    | 7  |
| AE 26 0 10  A 0 6 1  RRIDAE PODA  | PELECYPODA                              |            |             |      | 1  |
| 26 0 10<br>0 6 1  | SPHAERIIDAE                             |            |             |      |  |
| 0 6 1   | PISIDIUM                                | <b>5</b> 6 | 0           | 5    |  |
| - P .   | SPHAERIUM                               | c          | u           | •    |  |
| AR.   | 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | •          | •           | -    |  |
|   | ALL SPHAERIIDAE<br>ALL PELECYPODA       |            |             |      | 286  |

B-/22

| DETROIT RIVER TRANSECT 14 STATION 1 | GRAB | 700   | NTS      | ESTIMATED     |
|-------------------------------------|------|-------|----------|---------------|
| TAXON                               | -    | 1 2 3 | 6        | NO./SQ. METER |
| CNIDARIA<br>Hydra                   | 8    | 7     | •        | 165           |
| ALL CNIDARIA                        |      |       |          | 165           |
| RHABDOCDELA                         | -    | -     | 0        | 7             |
| NEERT I NEA                         | ø    | 4     | -        | 76            |
| NEMATODA                            | 0    | 0     | 24       | 165           |
| OL I GOCHAETA<br>Branchiura         | 0    | 0     | **       |               |
| NAIS                                | 0    | 0     | 8        |               |
| SPIROSPERMA                         | 0    | 0     | 7        |               |
| OTHER<br>ALL OLIGOCHAETA            | 8    | 181   | 334      | 3547          |
| MANAYUMKIA SPECIOSA                 | ស    | 36    | <b>o</b> | 1308          |
| CLADOCERA<br>DAPHNIA                | 4    | 4     | 6        | . 92          |
| ALL CLADOCERA                       |      |       |          | 76            |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA                        |      |              |            | 5/10/83       |
|--|------|--------------|------------|---------------|
| TRANSECT 14 STATION 1 (CONT'D)                               | 9400 | STANIOS BABS | A TA       | COTAMITAGE    |
| TAXON  | -    | 3~           |            | NO./SQ. METER |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                             | 1    | -            | •          |               |
| DIAPTOMUS  | 5    | ĸ            | 0          |               |
| HARPACTICOIDA  | 0    | ō            | <b>8</b> 0 |               |
| LIMNOCALANUS   | -    | 0            | 7          |               |
| ALL COPEDODA   |      |              |            | 854           |
| OSTRACODA  | -    | 4            | 8          | 48            |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA    | 0 70 | - œ          | 0 0        | 406           |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HERGENIA                     | ٥    | •            | •          |               |
| BAETISCI DAE<br>BAETISCA                                     |      | 0            | 8          | ;             |
| ALL EPHEMENOFIENA<br>TRICHOPTERA<br>LEPTOCERIDAE<br>CERACLEA | •    | -            | 0          | -<br><b>1</b> |
| ALL TRICHOPTERA  |      |              |            |               |
| ACARINA  | 0    | -            | n          | . 58          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |      | 5/10/83       |
|---------------------------------------|-----|-------------|------|---------------|
| TRANSECT 14 STATION 1 (CONT'D)        | GRA | GRAB COUNTS | NTS. | ESTIMATED     |
| TAXON                                 |     | 7           | 2 3  | NO./SO. METER |
| GASTROPODA                            | •   | -           | 66   |               |
| AMICULA                               | •   | •           | :    |               |
| ELIMIA LIVESCENS                      | 9   | 6           | 0    |               |
| ALL GASTROPODA                        |     |             |      | 324           |
| PELECYPODA                            |     |             |      |               |
| SPHAERIDAE                            |     |             |      |               |
| PISIDIUM                              | 4   | 4           | 7    |               |
|                                       | •   | 4           | ٢    |               |
|                                       | -   | 1           | •    |               |
| ALL SPHAERIIDAE                       |     |             |      | 289           |
| ALL DELECYPODA                        |     |             |      | 289           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |          |            | 5/10/83       |
|---------------------------------------|----------|----------|------------|---------------|
| DETROIT RIVER TRANSECT 14 STATION 2   | Ġ        | STAINTS  | N TN       | Catamitan     |
| TAXON                                 | <b>.</b> | 6<br>7   |            | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 4        | 72<br>72 | 1,         | 317           |
| ALL CNIDARIA                          |          |          |            | 317           |
| RHABDOCOELA                           | 0        | -        | 0          | •             |
| NEMERTINEA                            | 4        | 9        | -          | 76            |
| NEMATODA                              | 9        | 7        | <b>I</b> O | 152           |
| OL IGOCHAETA<br>Branchiura            | 0        | -        | 0          |               |
| NAIS                                  | -        | 8        | 0          |               |
| SPIROSPERMA                           | 6        | 5        | ND.        |               |
| OTHER<br>ALL OLIGOCHAETA              | 133      | 319      | 189        | 4628          |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA     | 148      | 206      | 296        | 6542          |
| ALL POLYCHAETA                        |          |          |            | 6542          |
| CLADOCERA<br>DAPHNIA                  | и        | 8        | 4          | Ŧ             |
| A'L CLADOCERA                         |          |          |            | 7             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA    |           |             |          | 5/10/83   |
|--|-----------|-------------|----------|---|
| TRANSECT 14 STATION 2 (CONT'D)           | 1         |             | į        |   |
| TAXON                                    | GRAB<br>+ | GRAB COUNTS | 2 E      | ESTIMATED<br>NO./SQ. METER  |
| COPEPODA<br>CYCLOPS BICUSPIDATUS         | 0         | -           | -        | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| DIAPTOMUS                                | 8         | 4           | 0        |   |
| HARPACTICOIDA                            | 0         | 29          | <b>a</b> |   |
| ALL COPEDODA .                           |           |             |          | 310   |
| OSTRACODA                                | 0         | 25          | 80       | 227   |
| DIPTERA<br>CHIRONOMIDAE                  | 4         | 75          | 26       | 666   |
| EPHEMEROPTERA<br>BAETISCIDAE<br>BAETISCA | 8         | 0           | 0        |   |
| ALL EPHEMEROPTERA                        |           |             |          | 7   |
| ACARINA                                  | 0         | 0           | 8        | 7   |
| GASTROPODA<br>AMNICOLA                   | -         | ~           | n        |   |
| BITHVIA                                  | 0         | -           | 0        |   |
| i —                                      | 0         | ø           | ო        | ·   |
| PLEUROCERA ACUTA                         | 0         | 0           | -        |   |
| ALL GASTROPODA                           |           |             |          | 110   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |    |             |     | 5/10/83                                   |
|---------------------------------------|----|-------------|-----|---|
| TRANSECT 14 STATION 2 (CONT'D)        | 88 | GRAB COUNTS | STA | ESTIMATED                                 |
| TAXON                                 | -  | 1 2 3       | 6   | 1 2 3 NO./SQ. METER                       |
| PELECYPODA                            |    |             |     | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| SPHAERIIDAE                           |    |             |     |   |
| PISIDIUM                              | 9  | 36          | 9   |   |
|                                       |    |             |     |   |
| SPHAERIUM                             | 8  | 75          | 5   |   |
| ****                                  |    |             |     |   |
| ALL SPHAERIIDAE                       |    |             |     | 716                                       |
| RADIATA                               | 0  | 0           | -   |   |
|                                       |    |             |     | 723                                       |
| ALL PELECTPUDA                        |    |             |     | 2   |

| MACKUZUUBENIHUS PUNAK GKAB CUUNI DAIA | DATA |             |           | 56/01/6                    |
|---------------------------------------|------|-------------|-----------|----------------------------|
| DETROIT RIVER TRANSECT 14 STATION     | ო    | ;           |           |                            |
| TAXON                                 | GR.  | GRAB COUNTS | STNU<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 16   | 0           | 4         | 138                        |
| ALL CNIDARIA                          |      |             |           | 138                        |
| RHABDOCDELA                           | -    | -           | 0         | 4                          |
| NEMERTINEA                            | 38   | 7           | ũ         | 413                        |
| NEMATODA                              | 20   | 8           | 27        | 461                        |
| HIRUDINEA<br>GLOSSIPHONIIDAE          | 0    | 0           | -         | 7                          |
| OLIGOCHAETA<br>BRANCHIURA SOWERBYI    | -    | 0           | 0         |                            |
| SPIROSPERMA                           | 185  | 89          | 180       |                            |
| OTHER<br>ALL OLIGOCHAETA              | 285  | 80          | 144       | 6349                       |
| POLYCHAETA<br>Manayunkia speciosa     | 1293 | 197         | 417       | 13133                      |
| ALL POLYCHAETA                        |      |             |           | 13133                      |
| CLADOCERA<br>ALONA                    | 0    | -           | 0         |                            |
| ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; | •    | •           | ,         |                            |
| DAPHNIA                               | 0    | 4           | -         |                            |
| ILYOCRYPTUS                           | •    | 4           | 0         |                            |
| ALL CLADOCERA                         |      |             |           | 69                         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |           |        |             | 5/10/83  |
|---|-----------|--------|-------------|--|
| TRANSECT 14 STATION 3 (CONT'D)            |           | į      |             |  |
|   | GRAE<br>→ | ,<br>, | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER   |
| COPEPODA<br>CYCLOPS BICUSPIDATUS          | 0         | 0      | -           | 6<br>8<br>8<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| DIAPTOMUS                                 | 6         | 4      | ស           |  |
| HARPACTICOIDA                             | ***       | 0      | -           |  |
| LIMNOCALANUS                              | 8         | g      | ю           |  |
| PARACYCLOPS                               | 0         | 0      | 8           |  |
| ALL COPEPODA                              |           |        |             | 193  |
| OSTRACODA                                 | 83        | ∞      | 187         | 1914   |
| TERRESTRIAL INSECT                        | 0         | -      | 0           | ٢  |
| DIPTERA<br>CHIRONOMIDAE                   | 69        | 46     | 101         | 1611   |
| EPHEMEROPTERA<br>Ephemeridae<br>Hexagenia | -         | -      | 4           |  |
| BAETISCIDAE<br>BAETISCA                   | -         | 0      | 0           |  |
| ALL EPHEMEROPTERA                         |           |        |             | 84   |
| TRICHOPTERA<br>LEPTOCERIDAE<br>CERACLEA   | 8         | 0      | 0           |  |
| ALL TRICHOPTERA                           |           |        |             | 7  |
| ACARINA                                   | 4         | 0      | 4           | 76   |
|   |           |        |             |  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |       |     | 5/10/83       |
|---------------------------------------|------|-------|-----|---------------|
| TRANSECT 14 STATION 3 (CONT'D)        | 0400 | į     | į.  |               |
| TAXON                                 | -    | 1 2 3 | n m | NO./SQ. METER |
| GASTROPODA<br>AMNICOLA                | 0    | -     | 0   |               |
| ELIMIA LIVESCENS                      | 0    | 0     | -   |               |
| ALL GASTROPODA                        |      |       |     | 4             |
| PELECYPODA<br>Sphafridae              |      |       |     |               |
| PISIOIN                               | 54   | Ξ     | 20  |               |
| SPHAERIUM                             | 30   | 8     | 6   |               |
| ALL SPHAERIIDAE<br>ALL PELECYPODA     |      |       |     | 826<br>826    |

| MACRUZUOBENIHUS PONAR GRAB COUNT DATA | COUNT DATA            |          |            |     | 5/10/83   |
|---------------------------------------|-----------------------|----------|------------|-----|---|
| DETROIT RIVER TRANSECT                | TRANSECT 15 STATION 1 | 900      | 2          | 2   | 44  |
| TAXON                                 |                       | <b>-</b> | 1 2 3      | , E | NO./SQ. METER   |
| CNIDARIA                              |                       |          |            |     | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| A STOCK                               |                       | P. P.    | <b>D</b> . | 8   | 551   |
| ALL CNIDARIA                          |                       |          |            |     | 188   |
| RHABDOCDELA                           |                       | 0        | 0          | . 8 | <b>7</b>  |
| NEMATODA                              |                       | •        | 9          | ĸ   | 200   |
| DL1GOCHAETA<br>SP1ROSPERMA            |                       | 0        | 0          | -   |   |
| OTHER<br>ALL OLIGOCHAETA              |                       | =        | 99         | 23  | 969   |
| POLYCHAETA<br>Manayunkia speciosa     |                       | 0        | 0          | m   | 25  |
| ALL POLYCHAETA                        |                       |          |            |     | 21  |
| CLADOCERA<br>DAPHNIA                  |                       | ĸ        | ø          | 0   | 76  |
| ALL CLADOCERA                         |                       |          |            |     | 76  |
| COPEPODA<br>CYCLOPS BICUSPIDATUS      |                       | ₩.       | ō          | 0   |   |
| DIAPTOMUS                             |                       | -        | Ξ          | 0   |   |
| LIMNOCALANUS                          |                       | 6        | 0          | •   |   |
| ALL COPEPODA                          |                       |          |            |     | . 548   |
| OSTRACODA                             |                       | ~        | 0          | 0   | =   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |             |     | 5/10/83                 |
|---------------------------------------|-----------|-------------|-----|-------------------------|
| TRANSECT 15 STATION 1 (CONT'D)        |           |             |     |                         |
| TAXON                                 | GRAB<br>- | GRAB COUNTS | ۳ e | ESTIMATED NO./SQ. METER |
| AMPHI PODA<br>Gammarus                | 0         | 0           | -   | 7                       |
| ALL AMPHIPODA                         |           |             |     | •                       |
| DIPTERA<br>CHIRONOMIDAE               | 0         | ო           | φ   | 62                      |
| GASTROPODA<br>Amnicola                | •         | ø           | 0   |                         |
| ELIMIA LIVESCENS                      | 8         | <b>6</b>    | o   |                         |
| ALL GASTROPODA                        |           |             |     | 186                     |
| PELECYPODA<br>Sphaeriidae             |           |             |     |                         |
| PISIDIUM                              | ø         | 11          | 5   |                         |
| SPHAERIUM                             | 0         | 0           | -   |                         |
| ALL SPHAERIIDAE ALL PELECYPODA        |           |             |     | 310<br>016              |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA | DATA     |          |             | 5/10/83      |
|---------------------------------------|----------|----------|-------------|--------------|
| DETROIT RIVER TRANSECT 15 STATION 2   |          | 88<br>Cd | GRAB COUNTS | ESTIMATED    |
|                                       | - !      | 7        | ,           | MO./ SQ. ME. |
| CNIDARIA<br>Hydra                     | 159      | 266      | 383         | 5564         |
| ALL CNIDARIA                          |          |          |             | 5564         |
| TRICLADIDA                            | 0        | -        | 8           | 21           |
| NEME ?TINEA                           | LO.      | Ø        | •           | 152          |
| NEMATODA                              | 167      | 192      | 508         | 3912         |
| OLIGOCHAETA<br>Spirosperma            | <b>1</b> |          | 5           |              |
| OTHER<br>ALL OLIGOCHAETA              | 140      |          | . 4         | 2638         |
| POLYCHAETA<br>Manayumkia speciosa     | 4        | 46       | 93          | 781          |
| ALL POLYCHAETA                        |          |          |             | 751          |
| CLADOCERA<br>BOSMINA                  | 0        | •        | -           | •            |
| ALL CLADOCERA                         |          |          |             | •            |
| COPEPODA<br>CYCLOPS BICUSPIDATUS      | 7        | •        | 0           |              |
| CIAPTOMUS                             | 8        | *        | n           |              |
| HARPACTICOIDA                         | -        | -        | 0           | •            |
| LIMNOCALANUS                          | -        | 8        | -           |              |
| ALL COPEPODA                          |          |          |             | 117          |

| MACKUZUUBENIHUS PUNAR GRAB COUNT DATA   |          |             |       | 5/10/83          |
|---|----------|-------------|-------|------------------|
| TRANSECT 15 STATION 2 (CONT'D)          |          |             |       |                  |
| TAXON                                   | GRAE     | GRAB COUNTS | NTS   | ESTIMATED NO VEG |
| OSTRACODA                               |          | -   -       | ,   4 |                  |
| DIPTERA                                 |          |             | •     | 9                |
| CHIROMOMIDAE                            | ~        | <b>6</b>    | 8     | 84               |
| EPHEMEROPTERA                           |          |             |       |                  |
| CAENIDAE                                |          |             |       |                  |
| CAENIS                                  | <b>-</b> | -           | 0     |                  |
| EPHEMERIDAE                             |          |             |       |                  |
| HEXAGENIA                               | -        | ·           | c     |                  |
| 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |          | •           | >     |                  |
| BAETISCIDAE                             |          |             |       |                  |
| BAETISCA                                | -        | c           | •     |                  |
| • | -        | •           | -     |                  |
| ALL EPHEMEROPTERA                       |          |             |       | 62               |
| TRICHOPTERA                             |          |             |       |                  |
| HYDROPSYCHIDAE                          |          |             |       |                  |
| CHEUMATOPSYCHE                          | 60       | 7           | 0     |                  |
|   |          |             | )     |                  |
| ALL INICHOPTERA                         |          |             |       | 172              |
| GASTROPODA                              |          |             |       |                  |
|   | 0        | -           | -     | 71               |
|   |          |             |       | :                |
| ALE GASTROPOA                           |          |             |       | 7                |
| PELECYPODA                              |          |             |       | •                |
| SPHAERIIDAE                             |          |             |       |                  |
| PISIDIUM                                | 4        | ō           | 5     |                  |
|   |          |             |       |                  |
| SPHAEKIUM                               | ~        | -           | 0     |                  |
| ALL SPHAERIIDAE                         |          |             |       | Č                |
| ALL PELECYPODA                          |          |             |       | 220              |
|   |          |             |       |                  |

| DETROIT RIVER TRANSECT 15 STATION 3 |                |             |          |                            |
|-------------------------------------|----------------|-------------|----------|----------------------------|
|                                     | <b>&amp;</b> ~ | GRAB COUNTS | STS<br>8 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                   | 1087           | 561         | 39       | 11618                      |
| ALL CNIDARIA                        |                |             |          | 11618                      |
| RHABDOCDELA                         | ٥              | -           | 0        | 7                          |
| NEMERTINEA                          | •              | 4           | <b>O</b> | 145                        |
| NEMATODA                            | 96             | <b>.</b>    | 2        | 661                        |
| HIRUDINEA<br>GLOSSIPHONIIDAE        | -              | •           | 0        | 7                          |
| OL I GOCHAETA<br>SP I ROSPERMA      | •              | 0           | 88       |                            |
| OTHER<br>ALL OLIGOCHAETA            | 8              |             | 177      | 2362                       |
| POLYCHAETA MANAYUMKIA SPECIOSA      | ā              | 4           | 80       | 1584<br>1584               |
| CLADOCERA<br>DAPINIA                | -              | -           | ٥        | 2                          |
| ALL CLADOCERA                       |                |             |          | 2                          |

| TRANSECT 15 STATION 3 (CONT'D)                  |      |              |    |               |
|---|------|--------------|----|---------------|
|   | 8460 | STUMBOL BAGG | Ļ  | Catematra     |
|   | -    | 200          |    | NO./SO. METER |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                | 7    | 6            | 7  |               |
| DIAPTOMUS                                       | n    | 7            | ~  |               |
| LIMNOCALANUS                                    | -    | -            | ~  |               |
| ALL COPEPODA                                    |      |              |    | 158           |
| OSTRACODA                                       | •    | 7            | 22 | 310           |
| DIPTERA<br>CHIRONOMIDAE                         | 74   | -            | 0  | 66            |
| EPHEMEROPTERA<br>EPHEMEROPTERA                  | 0    | 0            | -  |               |
| BAETISCIDAE<br>Baetisca                         | m    | 9            | -  |               |
| ALL EPHEMEROPTERA                               |      |              |    | 92            |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | 2    | 4            | 0  |               |
| HYDROPSYCHE                                     | 8    | -            | 0  |               |
| ALL TRICHOPTERA                                 |      |              |    | 183           |
| ACARINA   | 0    | 0            | -  | •             |
| GASTROPODA<br>ELIMIA LIVESCENS                  | 6    | •            | 0  | 21            |
| LL GASTROPODA                                   |      |              |    | 21            |

| TRANSECT 15 STATION 3 (CONT'D)  GRAB COUNTS ESTIMATED  1 2 3 NO./SQ. METER  PELECYPODA SPHAERIIDAE 10 9 24 |       |       |               |
|--|-------|-------|---------------|
| GRAB COUNTS 1 2 3 E 1 2 3 811DAE   |       |       |               |
| 1 2 3 E 10 9 24 RIIDAE   | RAB C | DUNTS | ESTIMATED     |
| E<br>RIIDAE<br>PODA  | 8     | m     | NO./SQ. METER |
| 10 8 24<br>3 0 3   | !     | !     | 1             |
| 10 9 24<br>3 0 3   |       |       |               |
| . O E  |       |       |               |
| 6 0 8  |       |       |               |
| <u> </u>   |       | ю     |               |
| <u>u</u>   | ı     |       |               |
|  |       |       | 337           |
|  |       |       | 337           |
|  |       |       |               |

| DETENT BIVED TOANSECT 16 STATION 1      |     |             |      |               |
|---|-----|-------------|------|---------------|
|   | 8   | GRAB COUNTS | UNTS | ESTIMATED     |
| TAXON                                   | -   | 7           | 6    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                       | 269 | 211         | 192  | 4628          |
| ALL CNIDARIA                            |     |             |      | 4628          |
| RHABDOCOELA                             | 9   | •           | 32   | 317           |
| NEMATODA                                | 98  | 72          | 138  | 2038          |
| HIRUDINEA<br>Erpoboellidae              | m   | N           | o    |               |
| ⋖                                       | 0   | ٥           | -    |               |
| HELOBDELLA ELONGATA                     | -   | 8           | 0    |               |
| HELOBDELLA STAGNALIS                    | -   | -           | 0    |               |
| ALL HIRUDINEA                           |     |             |      | 138           |
| OLI GOCHAETA                            | c   | c           | -    |               |
| 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | •   |             |      |               |
| SPIROSPERMA                             | 0   | 0           | -    |               |
| OTHER<br>ALL DLIGOCHAETA                | 439 | 220         | 416  | 7417          |
| CLADOCERA                               | •   | (           | (    | •             |
| ALONA                                   | -   | 0           | 0    |               |
| DAPHNIA                                 | 6   | 0           | -    |               |
| ILYOCRYPTUS                             | 0   | -           | 0    |               |
| ALI CLADOCERA                           |     |             |      | <b>‡</b>      |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |          |             |           | 5/10/83  |
|---|----------|-------------|-----------|--|
| TRANSECT 16 STATION 1 (CONT'D)                            | Ø₽.      | SPAR COUNTS | A TAIL    | FCTIMATED  |
| TAXON   | -        | ~           |           | NO./SQ. METER  |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                          | 7        | ٥           | ٥         |  |
|   | ı        | ı           | ļ.        |  |
|   | a        | 0           | 0         |  |
| DIAPTOMUS   | 4        | 0           | 0         |  |
| HARPACTICOIDA   | <b>4</b> | 7           | 9         |  |
| MACROCYCLOPS  | m        | -           | 60        |  |
| ALL COPEPODA  |          |             |           | 613  |
| OSTRACODA   | 102      | 63          | 95        | 1784   |
| AMPHIPODA<br>GAMMARUS                                     | -        | 0           | 0         |  |
| HYALELLA AZTECA   | 5        | 7           | 7         |  |
| ALL AMPHIPODA   |          |             |           | 269  |
| ISOPODA   | •        | •           | •         | ;  |
| ASCILOS   | -        | 7           | >         | 97   |
| ALL ISOPODA   |          |             |           | 28   |
| TERRESTRIAL INSECT  | -        | 0           | 0         | •  |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | ± 6      | 18<br>176   | 11<br>160 | 60<br>80<br>80<br>84<br>84<br>84<br>84<br>84<br>84<br>84<br>84<br>84<br>84<br>84<br>84<br>84 |
|   |          |             |           |  |

| TRANSECT 16 STATION 1 (CONT'D)         GRAB COUNTS 1         ESTIMATED 1           TAXON         1         2         3         NO./590. MET           CARNIS CAENIS CAE  | MACKUZUUBENTHOS PONAR GRAB COUNT DATA     |            |             |             | 5/10/83                    |
|--|---|------------|-------------|-------------|----------------------------|
| # ERA  | TRANSECT 16 STATION 1 (CONT'D)            |            | i           | į           |                            |
| ## ### ### ### #### ##################   |   | GKAB<br>-  | 5 6         | 2 C         | ESTIMATED<br>NO./SQ. METER |
| A EROPTERA  A HIDAE  HIDAE  TROPUS  TR |   | i<br> <br> | ,<br>!<br>! | 1<br>!<br>! | !<br>!<br>!<br>!<br>!<br>! |
| A EROPTERA 5 3 6 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | CAENIDAE                                  |            |             |             |                            |
| AE RODTERA  A HIDAE  PSYCHE  OPODIDAE  TROPUS  | CAENIS                                    | ស          | 7           | -           |                            |
| # EROPTERA   |   |            |             |             |                            |
| # FROPTERA   | EPHEREKIDAE                               |            |             |             |                            |
| ## OPTERA O 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | TEXAGENIA                                 | ED.        | ო           | 9           |                            |
| A HIDAE HIDAE OPODIDAE TROPUS  | ALL EPHEMEROPTERA                         |            |             |             | 186                        |
| A H TO A T T T T T T T T T T T T T T T T T   |   |            |             |             | 2                          |
| HIDAE HIDAE HODAE TRODIDAE TRO | LEPIDOPTERA                               | 0          | -           | •           | 4                          |
| HIDAE  PSYCHE  OPODIDAE  TROPUS  TROPU | TRICHOPTERA                               |            |             |             |                            |
| PSYCHE OPODIDAE OPODIDAE OPTERA OPODAE   | HYDROPSYCHIDAE                            |            |             |             |                            |
| OPODIDAE TRODUS  | CHEUMATOPSYCHE                            | 8          | 6           | 8           |                            |
| OPTERA  OPTERA  OPTERA  1 0 0  1 0 0  1 3 3 9  1 3 0 0  1 2 0 0  1 2 0 0  1 2 0 0  1 2 0 0  1 1 0  OPTERA  OPT |   |            |             |             |                            |
| A ACUTA  OPTERA  1 0 0  13 3 9 9  13 3 9 9  14 2 0 0 1  15 1 2  16 0 0 1  17 1 2  18 1 2  18 1 2  19 1 1  19 1 1  19 1 1   | POLYCENTROPODIDAE                         |            |             |             |                            |
| A ACUTA 0 0 1 1 1 0 00 1 1 1 0000A   | PHYLOCENTROPUS                            | -          | 0           | 0           |                            |
| 13 3 9 13 3 9 14 3 9 1 15 1 2 16 0 0 1 17 1 0 18 A ACUTA 0 1 1 19 0 0 1 1 19 0 0 1 1 19 0 0 1 1  | ALL TRICHOPTERA                           |            |             |             | 55                         |
| 13 3 9   | ACARINA                                   | 8          | 0           | 0           | 7                          |
| 13 3 9 0 0 1 1 2 0 0 1 1 2 0 0 1 1 1 1 1 1 1 1   | GASTROPODA                                |            |             |             |                            |
| 0 0 1 2 2 1 2 0 0 1 1 2 0 1 1 1 1 1 1 1  | AMNICOLA                                  | 13         | 6           | Ø           |                            |
| 0 0 1 2 2 1 2 0 0 1 1 1 1 1 1 1 1 1 1 1  | * 5 2 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 |            |             |             |                            |
| 2 1 2<br>0 0 1<br>0 0 1 1  | CAMPELOMA                                 | 0          | 0           | _           |                            |
| 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |   |            |             |             |                            |
| UTA 0 1 1  | GYRAULUS                                  | ~          | -           | N           | •                          |
| UTA 0 0 1  |   |            |             |             |                            |
| UTA 0 1 1  | AHASA                                     | 0          | 0           | -           |                            |
|  | PLEUROCERA ACUTA                          | c          | -           | -           | ÷                          |
|  |   | •          | -           | •           |                            |
|  | ALL GASTROPODA                            |            |             |             | 234                        |

| DETROIT RIVER TRANSECT 16 STATION 2     |                                       |          |             |                         |
|---|---------------------------------------|----------|-------------|-------------------------|
| TAXON                                   |                                       | 248<br>2 | GRAB COUNTS | ESTIMATED NO./SO. METER |
| CNIDARIA                                | ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; |          | 1           |                         |
| HYDRA                                   | 345                                   |          | 729 1039    | 15929                   |
| ALL CNIDARIA                            |                                       |          |             | 15929                   |
| RHABDOCOELA                             | 4                                     | Ξ        | S           | ote<br>Ote              |
| NEMERTINEA                              | e                                     | -        | ) a         | 3 6                     |
| NEMATODA                                | 287                                   | 356      | 311         | 6870                    |
| DLIGOCHAETA                             |                                       |          | •           | <b>)</b>                |
| NAIS                                    | •                                     | -        | 6           |                         |
| SPIROSPERMA                             |                                       | •        | •           |                         |
|   | 2                                     | 2        | <u> </u>    |                         |
| STYLARIA                                | 0                                     | 0        | +           |                         |
| OTHER                                   | 308                                   | 27.4     | 900         |                         |
| ALL OLIGOCHAETA                         | 3                                     | 5        | 8           | 7265                    |
| POLYCHAETA<br>MANAYUWKIA SPECIOSA       | 0                                     | 0        | ဖ           | 4                       |
| ALL POLYCHAETA                          |                                       |          |             | 7                       |
| CLADOCERA                               |                                       |          |             | •                       |
| BOSMINA                                 | 0                                     | 8        | 8           |                         |
| DIAPHANASOMA                            | •                                     | •        | •           |                         |
| 111111111111111111111111111111111111111 |                                       | •        | >           |                         |
| ILYOCRYPTUS                             | •                                     | 0        | 8           |                         |
| ALL CLADOCEDA                           |                                       |          |             | •                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |     |                      |           | 5/10/83                                  |
|---|-----|----------------------|-----------|--|
| TRANSECT 16 STATION 2 (CONT'D)                            | ;   |                      |           |  |
|   | ğ – | GRAB COUNTS<br>1 2 3 | STAU<br>3 | ESTIMATED<br>NO./SQ. METER               |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                          | 0   | <b>60</b>            |           | \$ { { } { } { } { } { } { } { } { } { } |
| DIAPTOMUS   | 0   | 7                    | 7         |  |
| HARPACTICOIDA   | 24  | 25                   | 59        |  |
| LIMNOCALANUS  | 0   | 4                    | ო         |  |
| MACROCYCLOPS  | 7   | e                    | 0         |  |
| MESOCYCLOPS   | 0   | 0                    | -         |  |
| PARACYCLOPS   | 0   | -                    | -         |  |
| ALL COPEPODA  |     |                      |           | 806                                      |
| OSTRACODA   | 8   | 67                   | 86        | 1543                                     |
| AMPHIPODA<br>Gammarus                                     | €0  | 0                    | ø         |  |
|   | -   | 8                    | 9         |  |
| ALL AMPHIPODA   |     |                      |           | 158                                      |
| TERRESTRIAL INSECT  | 0   | -                    | 8         | 21                                       |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 0   | 14<br>285            | 16 202    | 44 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4   |

| MACROZOOBENTHOS POWAR GRAB COUNT DATA |                  |             |            | 5/10/83                               |
|---------------------------------------|------------------|-------------|------------|---------------------------------------|
| TRANSECT 16 STATION 2 (CONT'D)        | į                |             | 9          |                                       |
| TAXON                                 | - GKA            | GRAB COUNTS | 3          | ESTIMATED NO./SQ. METER               |
| EPHEMEROPTERA<br>CAENTOAE             | ;<br>;<br>;<br>; | !<br>!<br>! |            | • • • • • • • • • • • • • • • • • • • |
| CAENIS                                | õ                | 12          | 5          |                                       |
| EPHEMERIDAE                           |                  |             |            |                                       |
| TEXAGENIA                             | 27               | Đ           | Ē.         |                                       |
| ALL EPHEMEROPTERA                     |                  |             |            | 634                                   |
| LEPIDOPTERA                           | -                | -           | 8          | 28                                    |
| TRICHOPTERA                           |                  |             |            |                                       |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE      | 8                | 6           | €          |                                       |
| HYDROPSYCHE                           | o                | c           | <b>u</b> r |                                       |
|                                       | •                | •           | ,          |                                       |
| LEPTOCERIDAE<br>OFCETIS               | c                | •           | c          |                                       |
| 1                                     | •                | •           | •          |                                       |
| POLYCENTROPODIDAE<br>NEURECLIPSIS     | c                | c           | •          |                                       |
|                                       | >                | >           | •          |                                       |
| PHYLOCENTROPUS                        | -                | 0           | -          |                                       |
| ALL TRICHOPTERA                       |                  |             |            | 168                                   |
| ACARINA                               | NO.              | •           | -          | 69                                    |
| TARDIGRADA                            | ٥                | 0           | -          | 1                                     |
| GASTROPODA                            |                  |             |            |                                       |
| AMNICOLA                              | ð                | <b>e</b>    | •          |                                       |
| ELIMIA LIVESCENS                      | 0                | 0           | -          |                                       |
| ALL GASTROPODA                        |                  |             |            | 124                                   |
|                                       |                  |             |            |                                       |

| 5/10/83                               |                                | ESTIMATED   | NO./SQ. METER | 1          |              | 1        | 0           | 778            |
|---------------------------------------|--------------------------------|-------------|---------------|------------|--------------|----------|-------------|----------------|
|                                       |                                | GRAB COUNTS | <b>.</b>      |            |              | 75       | 5           |                |
|                                       |                                | GRAB COUNTS | •             |            |              |          |             |                |
|                                       |                                | GRA         | - !           |            |              | 27       | ;           |                |
| MACROZOGBENTHOS PONAR GRAB COUNT DATA | TRANSECT 16 STATION 2 (CONT'D) |             |               |            |              |          |             | •              |
| MACROZOOBENTHD:                       | TRANSECT 16 ST                 | TAXON       |               | PELECYPODA | SPHAERI IDAE | PISIDIOM | 1 1 1 1 1 1 | ALL PELECYPODA |

B-145

3

|                              |                       |             |             |           | 50 /01 /5                  |
|------------------------------|-----------------------|-------------|-------------|-----------|----------------------------|
| DETROIT RIVER                | TRANSECT 16 STATION 3 |             | ;           |           |                            |
| TAXON                        |                       |             | GRAB COUNTS | SNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
|                              | 1                     | 730         | 123         | 96        | 6281                       |
| ALL CNIDARIA                 |                       |             |             |           | 6281                       |
| RHABDOCDELA                  |                       | 6           | 6           | 8         | 20                         |
| NEMERTINEA                   |                       | 8           | φ           | 0         | 15<br>15                   |
| NEMA TODA                    |                       | 33          | 76          | 23        | 806                        |
| OL I GOCHAETA<br>SPIROSPERMA |                       | 11          | 11          | 5         |                            |
| OTHER<br>ALL OLIGOCHAETA     |                       | 4<br>8<br>8 | 179         | 436       | 5854                       |
| MANAYUNKIA SPECIOSA          | ¥S.                   | <b>▼</b>    | 59          | •         | 227                        |
| CLADOCERA<br>BOSMINA         |                       | -           | 0           | 0         | Š                          |
| DAPHNIA                      |                       | -           | 0           | 8         |                            |
| ALL CLADOCERA                |                       |             |             |           | <b>58</b>                  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |                |              |     | 5/10/83       |
|---|----------------|--------------|-----|---------------|
| TRANSECT +6 STATION 3 (CONT'D)                            | 3 <b>4</b> 0 0 | SEAR COMMITS | AT. | FOTTMATER     |
| TAXON   | -              | 3 7          | 90  | NO./SQ. METER |
| BICUSPIDATUS  | 1              | -            | 7   |               |
| DIAPTOMUS   | ~              | 9            | 8   |               |
| HARPACTICOIDA   | ٥              | 6            | 4   |               |
| LIMMOCALANUS  | -              | 0            | 8   |               |
| ALL COPEDODA  |                |              |     | 124           |
| USTRACODA   | 4              | €            | -   | 06            |
| AMPHI PODA<br>GAMMARUS                                    | 4              | 8            | 7   |               |
| MALELLA AZTECA  | -              | 0            | 0   |               |
| ALL AMPHIPODA   |                |              |     | 131           |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | ~=             | ω 12.        | w 4 | 675<br>444    |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS                       | •              | 6            | 0   |               |
| EPHEMERIDAE<br>Hexagenia                                  | -              | 5            | 0   |               |
| BAETISCIDAE   | 0              | 7            | 0   |               |
| ALL EPHEMEROPTERA   |                |              |     | 152           |
|   |                |              |     |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |             |             | 5/10/83               |
|---------------------------------------|----------|-------------|-------------|-----------------------|
| TRANSECT 16 STATION 3 (CONT'D)        |          | Š           | į           |                       |
| TAXON                                 | -        | 1 2 3       | n m         | NO./SO. METER         |
| IDAE                                  | <br>     | i<br>i<br>i | )<br>)<br>} | !<br>!<br>!<br>!<br>! |
| CHEUMATOPSYCHE                        | 7        | 0           | 0           |                       |
| HYDROPSYCHE                           | ю        | -           | 0           |                       |
| ALL TRICHOPTERA                       |          |             |             | 76                    |
| ACARINA                               | 0        | 10          | 0           | 34                    |
| GASTROPODA<br>AMVICOLA                | -        | -           | 8           |                       |
| PLEUROCERA ACUTA                      | ~        | -           | -           |                       |
| ALL GASTROPODA                        |          |             |             | 80<br>80              |
| PELECYPODA                            |          |             |             |                       |
| SPHAERIIDAE<br>PISIDIUM               | 5        | 42          | 22          |                       |
|                                       | -        | •           | -           |                       |
|                                       |          | ı           |             |                       |
| ALL SPMAERIIDAE<br>INTONIDAE          |          |             |             | 620                   |
| ELLIPTIO DILATATUS                    | -        | 0           | 0           |                       |
|                                       | •        | ٥           | ٥           |                       |
| PLEUROBEMA CORDATUM                   | -        | 0           | 0           |                       |
| j -                                   | 0        | -           | 0           |                       |
|                                       |          | 0           | 0           |                       |
| OTHER ALL PELECYPODA                  | <b>-</b> | -           | 0           | 660                   |
|                                       |          |             |             |                       |

|  |                |              |            | 00 /01 /11                 |
|--|----------------|--------------|------------|----------------------------|
| DETROIT RIVER TRANSECT 17 STATION 1                            | •              |              |            |                            |
| TAXON  | <b>&amp;</b> ~ | GRAB COUNTS  | UNTS<br>3  | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA  | 280            | 452          | 178        | 6267                       |
| ALL CNIDARIA   |                |              | 1          | 6267                       |
| RHABDOCOELA  | <del>+</del>   | <b>36</b>    | 23         | 434                        |
| NEBERTINEA   | 0              | *            | -          | 34                         |
| NEMATODA   | 202            | 182          | 87         | 3244                       |
| HIRUDINEA<br>ERPOBDELLIDAE<br>GLOSSIPHONIIDAE<br>ALL HIRUDINEA | -0             | -0           | n <b>-</b> | ‡                          |
| OLIGOCHAETA<br>Nais<br>  | 0              | -            | 0          |                            |
| SPIROSPERMA  | -              | m            | 8          |                            |
| OTHER<br>ALL OLIGOCHAETA                                       | 629            | 708          | 432        | 12341                      |
| MANAVUNKIA SPECIOSA  | ▼              | <del>0</del> | 9          | 269                        |
| CLADOCERA<br>ALONA   | -              | 0            | 0          |                            |
| ALL CLADOCERA  |                |              |            | 7                          |

| DATA            |
|-----------------|
| COUNT           |
| GRAB            |
| PONAR           |
| MACROZOGBENTHOS |

5/10/83

| TAXON  | TRANSECT 17 STATION 1 (CONT'D)          | QU  | CO MA  | INTA             | FSTIMATED        | 150   |
|--|---|---|--------|------------------|------------------|-------|
| OIDIDAE S BICUSPIDATUS S BICUSPIDATU |   | -   | ે<br>- | 6                | NO./50           | METER |
| ### OCIOTORE 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 1 | :<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>: | !      | ;<br>;<br>;<br>; | ;<br>;<br>;<br>; |       |
| BICUSPIDATUS  BICUSPIDATUS  CLOPS  LANUS  CLOPS  LANUS  CLOPS  LANUS  CLOPS  LANUS  CLOPS  TO O O O O O O O O O O O O O O O O O O  | CYCLOPOIDIDAE                           | φ   | 0      | 0                |                  |       |
| 1  | CYCLOPS BICUSPIDATUS                    | 0   | 28     | 16               |                  |       |
| LOUDAE  LOUS  LANUS  LOUDAE  LANUS  140 123 100  1 0 0 2 0  1 0 0 2 0  1 0 0 0  1 0 0 0  1 1 0 0  1 1 1 2  1 1 1 2  1 1 1 2  1 1 1 2  1 1 1 2  1 1 1 3 3  1 1 1 3 3  1 1 1 3  1 1 1 3  1 1 1 2  1 1 1 2  1 1 1 3  1 1 1 1  |   |   |        |                  |                  |       |
| 1  | DIAPTOMUS                               | 8   | -      | 0                |                  |       |
| COTDA  | 6 1 1 2 1 1 1                           |   |        |                  |                  |       |
| LOPS   | HARPACTICOIDA                           | <b>\$</b>   | 123    | 8                |                  |       |
| LANUS CLOPS  |   |   |        |                  |                  |       |
| CCLOPS CCLOPS CCLOPS CCLOPS CCLOPS CCLOPS CCLOPS CCLOPS CCLOPS CCCLOPS CCCCCC CCCCCCCCCCCCCCCCCCCCCCCCCCCCC  | LIMNOCALANUS                            | 0   | 8      | 0                |                  |       |
| CLOPS  |   |   |        |                  |                  |       |
| LOPS LOPS LOPS LOPS LOPS FOOD  A AZTECA  A AZTECA  I POOD  I P | MACROCYCLOPS                            | -   | 0      | 0                |                  |       |
| LOPS PODA IPODA IPODA IPODA IPODA  | 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |   |        |                  |                  |       |
| PODA  S  | MESOCYCLOPS                             | -   | 0      | 0                |                  |       |
| ## AZTECA  | 1 1 2 2 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |   |        |                  | 1                |       |
| A AZTECA 1 6 0  IPODA IPODA  ODA  TERA  TERA  13 3 0  145 161 133 38  TERA  168 161 133 38  TERA  189 199 199 199 199 199 199 199 199 199  | ALL COPEPODA                            |   |        |                  | 2892             |       |
| A AZTECA   | MONTENDA                                |   |        |                  |                  |       |
| LLA AZTECA  LLA AZTECA  FULLA  | 3100000                                 | •   | ¥      | C                |                  |       |
| LLA AZTECA  LLA AZTECA  PHIPODA  US  US  US  US  US  US  US  US  US  U   | CAMMAKOS                                | -   | •      | •                |                  |       |
| PHIPODA  US  US  US  US  OPODA  POGONIDAE  POGONIDAE  OPTERA  OPTERA  OPTERA  S  S  S  S  S  S  S  S  S  S  S  S  S  | HVALELLA AZTECA                         | -   | N      | ٥                |                  |       |
| PHIPODA  US  US  US  US  US  US  US  US  US  U   |   |   |        |                  |                  |       |
| US   | ALL AMPHIPODA                           |   |        |                  | 69               |       |
| US   | A COORS                                 |   |        |                  |                  |       |
| US<br>US<br>OPODA<br>OPODA<br>POGONIDAE<br>PTERA<br>OPTERA<br>AE<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S  | ASELLUS                                 | -   | e      | 0                |                  |       |
| US   | 3 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |   |        |                  |                  |       |
| DPTERA  OPTERA  OPTERA  S  RIDAE  OPTERA  3 3 9  RIDAE  S  | LIRCEUS                                 | -   | -      | 7                |                  |       |
| OPODA OPOZONIDAE OMIDAE OMIDAE OPTERA OPTERA S S S S S S S S S S S S S S S S S S S   | 1 1 1                                   |   |        |                  |                  |       |
| POGONIDAE  POGONIDAE  OMIDAE  OPTERA  S  | ALL ISOPODA                             |   |        |                  | 80<br>80         |       |
| DAE 145 161 133 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3  | JIPTERA                                 | ,   | •      | •                |                  |       |
|  | CERATOPOGONIDAE                         | ₹ !   | 4      | P (              | 6                |       |
| а С<br>м м   | CHIRONOMIDAE<br>Ali Didifida            | 0.4   | 2      | 2                | 3088             |       |
| 60 C   |   |   |        |                  |                  |       |
| DAE 3 9 9 1 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1  | EPHEMEROPTERA                           |   |        |                  |                  |       |
| n (P)  | CAENIDAE                                | •   |        | đ                |                  |       |
| 0  | CAERIS                                  | 7   | ,      | <b>D</b>         |                  |       |
| 0 8  | EPHEMERIDAE                             |   |        |                  |                  |       |
|  | HEXAGENIA                               | <b>6</b>  | e      | 0                |                  |       |
|  |   |   |        |                  |                  |       |

|  |    |       |             |    | 5/10/83                 |
|--|----|-------|-------------|----|-------------------------|
| TRANSECT 17 STATION 1 (CONT'D)   |    |       |             |    |                         |
| TAXON  |    | RAB _ | GRAB COUNTS | 33 | ESTIMATED NO./SQ. METER |
|  | 0  |       | -           |    | 7                       |
| TRICHOPTERA  |    |       |             |    |                         |
| HYDROPSYCHIDAE<br>CHEIMATOSYCHE  | •  |       | ,           | ,  |                         |
| 1  | -  |       | _           | -  |                         |
| HYDROPSYCHE  | 7  |       | _           | 0  |                         |
| LEPTOCERIDAE   |    |       |             |    |                         |
| DECETIS  | •  | _     | 7           | 0  |                         |
| POLYCENTBOPOD TO A F   |    |       |             |    |                         |
| PHYLOCENTROPUS   | 8  |       | •           | -  |                         |
| ALL TRICHOPTERA  |    |       |             |    | 110                     |
| ACARINA  | ~  |       | 1           | ~  | 76                      |
| GASTROPODA   |    |       |             |    |                         |
| AMNICOLA   | 91 | -     | _           | 6  |                         |
|  | -  |       | •           | 0  |                         |
| TANKS AND THE STATE OF THE STAT | C  |       | -           | o  |                         |
| *  | )  |       |             | ,  |                         |
| PLEUROCERA ACUTA   | •  |       | 0           | -  |                         |
| 0  |    |       |             |    | 234                     |
| PELECYPOOA   |    |       |             |    |                         |
| PISIDIUM   | 28 |       | _           | •  |                         |
|  |    |       |             |    |                         |
| SPTAERIUM  | 0  |       | _           | 0  |                         |
| ALL SPHAERIIDAE  |    |       |             |    | 275                     |
| _  |    |       | -           | 0  |                         |
| i  | 0  |       | -           | ٥  |                         |
| ALL PELECYPODA   |    |       |             |    | 289                     |

| DETROIT RIVER                     | TRANSECT 17 STATION 2 | Ę              | 9     |          |               |
|-----------------------------------|-----------------------|----------------|-------|----------|---------------|
| TAXON                             |                       | <del>Š</del> – | 4 2 3 | ) (C     | NO./SQ. METER |
| CNIDARIA<br>HYDRA                 |                       | 189            | 342   | 177      | 4876          |
| ALL CNIDARIA                      |                       |                |       |          | 4876          |
| RHABDOCOELA                       |                       | 0              | -     | -        | 4             |
| NEMERTINEA                        |                       | ч              | 0     | 8        | 28            |
| NEMATODA                          |                       | 117            | 143   | 123      | 2638          |
| OLIGOCHAETA<br>Spirosperma        |                       | 5              | œ     | 4        |               |
| OTHER<br>ALL DLIGOCHAETA          |                       | 113            | 238   | 129      | 3492          |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA | 10SA                  | 999            | 468   | 84<br>83 | 10185         |
| ALL POLYCHAETA                    |                       |                |       |          | 10185         |
| CLADOCERA DAPHNIA                 |                       | 0              | -     | М        | 78            |
| ALL CLADOCERA                     |                       |                |       |          | 28            |
| COPEPODA<br>DIAPTOMUS             |                       | 0              | 8     | •        |               |
| HARPACTICOIDA                     |                       | Ø              | 75    | ō        |               |
| LIMNOCALANUS                      |                       | -              | -     | 0        | ٠             |
| MESOCYCLOPS                       |                       | -              | 0     | 0        |               |
| ALL COPEPODA                      |                       |                |       |          | 989           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |    |             |    | 5/10/83       |
|---------------------------------------|----|-------------|----|---------------|
| TRANSECT 17 STATION 2 (CONT'D)        | 9  | SEAR COMMTS | Į, | FATTMATER     |
| TAXON                                 | -  | 5 6         |    | NO./SQ. METER |
|                                       | 7  | -           | 7  | 34            |
| DIPTERA<br>CEPATOPOGNIDAE             | -  | o           | c  |               |
| CHIRONOMIDAE<br>ALL DIPTERA           | 4  | 2           | 4  | 758<br>764    |
| EPHEMEROPTERA                         |    |             |    |               |
| CAENIDAE                              | -  | C           | c  |               |
|                                       |    | )           | •  |               |
| EPHEMERIDAE                           | -  | •           | •  |               |
|                                       | •  | •           | •  | ;             |
| ALL EPHEMEROPTERA                     |    |             |    | 7             |
| TRICHOPTERA                           |    |             |    |               |
| H. DROPSYCHIDAE                       | ~  | -           | C  |               |
|                                       | •  | •           | •  |               |
| LEPTOCERIDAE                          | •  | •           | •  |               |
|                                       | >  | -           | •  |               |
| DECETIS                               | 10 | 0           | •  |               |
| ALL TRICHOPTERA                       |    |             |    | 110           |
| ACARINA                               | •  | -           | -  | . 2           |
| GASTROPODA                            |    |             |    |               |
| AMNICOLA                              | 60 | 0           | 0  |               |
| ELIMIA LIVESCENS                      | 0  | ~           | -  |               |
| PLEUROCERA ACUTA                      | 0  | 0           | ~  |               |
|                                       |    |             |    |               |
| ALL GASTROPGOA                        |    |             |    | D<br>D        |

TRANSECT 17 STATION 2 (CONT.D)

GRAB COUNTS ESTIMATED

TAXON

PELECYPODA
SPHAERIIDAE
PISJOIUM
ALL SPHAERIIDAE
ALL SPHAERIIDAE
ALL PELECYPODA

275
ALL PELECYPODA
282

8-154

1

. - .

| MACROZODBENTHOS PONAR GRAB COUNT DATA |      |             |          | 5/10/83        |
|---------------------------------------|------|-------------|----------|----------------|
| DETROIT RIVER TRANSECT 17 STATION 3   | S    | GRAB COUNTS | FTS      | ESTIMATED      |
| TAXON                                 | -    | ~           | ,        | MU./ SU. METER |
| CNIDARIA HYDRA                        | 7    | 1.16        | 63       | 1386           |
| ALL CNIDARIA                          |      |             |          | 1398           |
| RHABDOCOELA                           | -    | 0           | 0        | <b>*</b>       |
| NEMERTINEA                            | 7    | ~           | 4        | 35.55          |
| WEMATODA                              | 76   | =           | <b>9</b> | 1618           |
| OLIGOCHAETA<br>Spirosperma            | 23   | •           | 7,       |                |
| OTHER<br>ALL OLIGOCHAETA              | 4    | 8           | <b>8</b> | 1667           |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA     | 2002 | 155         | 682      | 19572          |
| ALL POLYCHAETA                        |      |             |          | 19572          |
| COPEPODA<br>DIAPTOMUS                 | "    | 0           | 0        |                |
| LIMMOCALANUS                          | cı   | a           | -        |                |
| ALL COPEPODA                          |      |             |          | 48.            |
| OSTBACODA                             | 0    | 0           | ~        | <b>‡</b>       |

| TRANSECT 17 STATION 3 (CONT'D)  TAXON DIPTERA CERTOROGOMIDAE |      |             |                 |
|--|------|-------------|-----------------|
| DIPTERA  | GRAI | GRAB COUNTS | ESTIMATED METER |
| DIPTERA  | - 1  |             | NO./ DE. METER  |
|  | -    | c           |                 |
| CHIRONOMIDAE   | . 6  |             | 207             |
| ALL DIPTERA  |      |             | 213             |
| EPHEMEROPTERA  |      |             |                 |
| EPHEMER IDAE<br>HEYAGENIA                                    | •    |             |                 |
|  | -    | -           |                 |
| BAETISCIDAE  |      |             |                 |
| BAETISCA   | 0    | 0           |                 |
| ALL EPHEMEROPTERA  |      |             | 21              |
| TOTCHIDETEDA   |      |             |                 |
| LEPTOCERIDAE   |      |             |                 |
| DECETIS  | -    | 0           |                 |
| ALL TRICHOPTERA  |      |             | 7               |
| ACARINA  | 2    | 0           | 4               |
| GASTROPODA   |      |             |                 |
| AMNICOLA   | 0    | -           | 7               |
| ALL GASTROPODA   |      |             | •               |
| PELECYPODA   |      |             |                 |
| SPHAERIIOAE  | *    | +           |                 |
| 101011   | ,    | -           |                 |
| SPHAERIUM  | -    | 8           |                 |
| ALL SPHAERIDAE   |      |             | 172             |
| ALL PELECYPODA   |      |             | 17.2            |

| THE PROPERTY OF THE COURSE OF |                 |       |      | 59/11/6       |
|---|-----------------|-------|------|---------------|
| DETROIT RIVER TRANSECT 18 STATION   | +               | Š     | ,    |               |
| TAXON   |                 | 1 2 3 | 2 60 | NO./SQ. METER |
| CNIDARIA<br>HYDRA   | . 10            | 60    | 32   | 875           |
| ALL CNIDARIA  |                 |       | 1    | 878           |
| RHABDOCDELA   | Ξ               | 11    | 7    | 475           |
| NEMERTINEA  | •               | 0     | 0    | <b>58</b>     |
| NEMATODA  | 8               | 11    | 10   | 723           |
| HIRUDINEA<br>ERPOBDELLIDAE  | -               | 0     | 0    |               |
| OL IGOCHAETA<br>NAIS  | 5               | . 0   | 32   |               |
| SPIROSPERMA   | 372             | 7     | 230  |               |
| OTHER<br>ALL OLIGOCHAETA  | 104121168712250 | 6871  | 1250 | 241123        |
| MANAYUMKIA SPECIOSA   | 404             | 0     | ٥    | 2782          |
| ALL POLYCHAETA  |                 |       |      | 2782          |
| CLADOCERA<br>Daphnia  | -               | 0     | -    |               |
| ILYOCRYPTUS   | *               | •     | •    |               |
| AL CLADOCERA  |                 |       |      | 152           |

| T 18 STATION 1 (CONT'D)  GRAB COUNTS  A PS BICUSPIDATUS  A PS BICUSPIDATUS  A PS BICUSPIDATUS  A PS BICUSPIDATUS  A B B A B B B B B B B B B B B B B B B  |   |               |             |     |   |
|--|---|---------------|-------------|-----|---|
| A BE BICUSPIDATUS  BY BICUSPIDATUS  CALANUS  CALANUS  DA DA  DA  | TRANSECT 18 STATION 1 (CONT'D)                  | 8 <b>4</b> 00 | Š           | Į.  | ECTIMATED   |
| PS BICUSPIDATUS  PS BICUSPIDATUS  14 0 0  CALANUS  CALANUS  THEOGRA  PEPODA  1 8 1 69  DA  DA  DA  DA  DA  DA  DA  DA  DA  D   |   | -             | 2           | , m | E   |
| 14 0 0   0   0   0   0   0   0   0   0   | S BICUSPIDATUS                                  | ø             | 0           | 60  | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| CALANUS  CALANUS  DA  DA  DA  BUDA  PEPODA  DA  PUDOA  PUD | DIAPTOMUS                                       | <b>4</b>      | 0           | 0   |   |
| DA   | LIMPOCALANDS                                    | -             | 0           | 0   |   |
| DA  BDA  RUS  PUS  PUS  PUS  PUS  PUS  PUS  PUS  | ALL COPEPUDA                                    |               |             |     | 200   |
| PHIPODA PHIPOD | OSTRACODA                                       | -             | €           | -   | 69  |
| NIDAE 8 .1 2 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4   | AMPH1PODA<br>Gammarus                           | 0             | -           | 0   | ٢   |
| POGGNIDAE 8 .1 2 OWIDAE 13 6 6 1 PTERA 0PTERA 1 3 0 ENIDAE 1 3 0 ENIDAE 1 3 0 TERA 1 0 0 2 TERA 1 0 0 0 1 ICHOPTERA 1 0 0 0  | ALL AMPHIPODA                                   |               |             |     | 7   |
| A  | OIPTERA<br>CERATOPOGONIDAE                      | •             | <del></del> | ~   |   |
| RA ROPTERA 1 3 0 1 3 0 1 1 3 0 1 1 1 1 1 1 1 1 1 1   | CHIRONOMIDAE<br>All diptera                     | <del>.</del>  | ø           | œ   | 172<br>248  |
| ROPTERA 0 0 2 IDAE 1 0 0 2 PTERA   | EPHEMEROPTERA<br>Ephemeridae<br>Hexagenia       | -             |             | ٥   |   |
| 10AE<br>SYCHE 1 0 0  | ALL EPHEMEROPTERA                               |               |             |     | 28  |
| IDAE<br>SYCHE<br>SYCHE<br>SYCHE<br>PTERA   | LEPIDOPTERA                                     | 0             | 0           | ~   | 4.  |
| ALL TRICHOPTERA 7  | TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | -             | 0           | 0   |   |
|  | ALL TRICHOPTERA                                 |               |             |     | 7   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |             |          | 5/11/83                 |
|---|-----|-------------|----------|-------------------------|
| TRANSECT 18 STATION + (CONT'D)          |     |             |          |                         |
| TAXON                                   | ğ ~ | GRAB COUNTS | STAL 3   | ESTIMATED NO./SQ. METER |
| GASTROPODA                              |     |             |          |                         |
| AMNICOLA                                | -   | 0           | -        |                         |
| • |     | ,           |          |                         |
| GYRAULUS                                | 0   | 0           | -        |                         |
| 1115911                                 |     |             |          |                         |
| ALL GASTROPODA                          |     |             |          | 2                       |
| PELECYPODA                              |     |             |          |                         |
| SPHAERIIDAE                             |     |             |          |                         |
| PISIDION                                | 22  | 8           | <b>5</b> | 413                     |
| = |     |             |          |                         |
| ALL PELECYPODA                          |     |             |          | 413                     |
|   |     |             |          |                         |

| MACKUZUUBENITUS PUNAK GKAB CUUNI DAIA |              |             |            | 5/11/83                    |
|---------------------------------------|--------------|-------------|------------|----------------------------|
| DETROIT RIVER TRANSECT 18 STATION 2   |              |             |            |                            |
| TAXON                                 |              | GRAB COUNTS | UNTS<br>3  | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 103          | 6           | ٥          | 840                        |
| ALL CNIDARIA                          |              |             |            | 640                        |
| RHABDOCOELA                           | <del>5</del> | 24          | 0          | 296                        |
| NEMERTINEA                            | m            | 181         | 7          | 1370                       |
| NEMATODA                              | 275          | 10          | 31         | 2142                       |
| OL I GOCHAETA<br>SPIROSPERMA          | 25           | 62          | <b>s</b> D |                            |
| OTHER<br>ALL OLIGOCHAETA              | 521625768    | 5768        | 695        | 216962                     |
| CLADOCERA<br>DAPHNIA                  | •            | -           | 0          |                            |
| ILYOCRYPTUS                           | 0            | 0           | -          |                            |
| ALL CLADOCERA                         |              |             |            | 2                          |
| COPEPODA                              | •            | -           | ~          |                            |
| LIMOCALANUS                           | -            | 0           | -          |                            |
| ALL COPEPODA                          |              |             |            | 124                        |
| OSTRACODA                             | 0            | 0           | -          | •                          |

| TRANSECT 18 STATION 2 (CONT'D)  GRAB COUNTS  TAXON  AMMARRIS  AMMARRIS  AND./50. NETE  1 0 13 0  ALL AMPHIPODA  DIPTERA  CERATOPOGONIDAE  CHROMONOMIDAE  CHROMONOMIDAE  CAENIDAE  ALL DIPTERA  CAENIDAE  ALL EPHEMEROPTERA  ALL TRICHOPTERA  ALL TRICHOPT | MACROZOGBENTHOS PONAR GRAB COUNT DATA   |     |     |     | 5/11/83       |
|--|---|-----|-----|-----|---------------|
| S 20 13 0  A AZTECA IPODA GONIDAE GONIDAE ERA TERA TERA TERA TERA TERA TERA TER  | TRANSECT 18 STATION 2 (CONT'D)  | Q   | 2   | MTC | FSTIMATED     |
| S  | TAXON   | -   | 5 ~ | 20  | NO./SQ. METER |
| LLA AZTECA  LLA AZTECA  LLA AZTECA  PHIPODA  PHIPODA  PHIPODA  POGONIDAE  38 35 2 5 5 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0  | AMPHIPODA<br>GAMMARUS   | S   | 6   | ٥   |               |
| LLA AZTECA  LLA AZTECA  LLA AZTECA  PHIPODA  PHIPODA  PHIPODA  POGONIDAE  38 35 2 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6  |   | )   | )   | •   |               |
| PHIPODA PHIPODA PHIPODA PHIPODA POGONIDAE DIDAE  | HYALELLA AZTECA   | -   | 0   | 0   |               |
| POGONIDAE  OMIDAE  OMIDAE  DIDAE  DAE  DAE  PTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  AE  ENIA  ENIA  TERA  TERA  TERA  TILIDAE  ATOPSYCHE  A | ALL AMPHIPODA   |     |     |     | 234           |
| POGONIDAE  OMIDAE  OMIDAE  OMIDAE  DIDAE  ODAE  PTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  TERA  TERA  TERA  TERA  TERA  TO 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1  | DIPTERA   |     |     |     |               |
| PTERA PERA CHE CHE CHE ERA   | CERATOPOGONIDAE   | -   | 0   | -   |               |
| PTERA PTERA CHE  | CHIRONOMIDAE  | 98  | 33  | 7   | 516           |
| PTERA PTERA CHE CHE CHE CHE ERA  | PSYCHOOLDAE   | ۰ د | N ( | 00  |               |
| PTERA  | ALL DIPTERA   | -   | •   | •   | 50.           |
| E  | EPHENEROPTERA   |     |     |     |               |
| DAE 1 2 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1  | CAENIDAE  | (   | •   | (   |               |
| DAE 1 2 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1  | CAENIS  | 0   | -   | 0   |               |
| 1 2 0 ROPTERA ROPTERA O 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | EPVEMERIDAE   |     |     |     |               |
| DAE 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | HEXAGENIA   | -   | a   | 0   |               |
| NOPTERA ROPTERA 10AE 5YCHE 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1   | HEPTAGENIDAE  |     |     |     |               |
| 10AE 10AE 10AE 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | STENONEMA   | 0   | -   | 0   |               |
| 10AE<br>SYCHE 1 0 0<br>SYCHE 1 0 0<br>DAE 4 0 0  | ALL EPHEMEROPTERA   |     |     |     | 46            |
| 10 A A A A O O   | LEPIDOPTERA   | 0   | -   | 0   | 7             |
| w ( •  | TRICHOPTERA   |     |     |     | •             |
| 4 0 0  | HYDROPSYCHIOAE<br>CHEUMATOPSYCHE  | -   | 0   | 0   |               |
| 4 0 0  |   |     |     |     |               |
|  | HYDROPTILIDAE   | •   | c   | c   |               |
|  | חיטארוייים אינייים איניים איניים איניים | •   | •   | •   |               |
|  | ALL TRICHOPTERA   |     |     |     | 96            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |        |             |       | 5/11/83       |
|---------------------------------------|--------|-------------|-------|---------------|
| TRANSECT 18 STATION 2 (CONT'D)        | Š      | 5           | 9     |               |
|                                       | ,<br>, | 9<br>8<br>8 | 4 2 3 | NO./SQ. METER |
| ODONA TA<br>COENAGRIONIDAE            | 0      | -           | 0     | 7             |
| ACARINA                               | ø      | 6           | 0     | 62            |
| TARDIGRADA                            | 0      | 16          | -     | 117           |
| GASTROPODA<br>AMNICOLA                | -      | -           | -     |               |
| AINTHY                                | 0      | -           | 0     |               |
| FERISSIA                              | -      | 23          | -     |               |
| HYSA                                  | 0      | 7           | 0     |               |
| VALVATA TRICARINATA                   | 0      | 0           | -     |               |
| ALL GASTROPODA                        |        |             |       | 241           |
| PELECYPODA<br>SPHAERIIDAE<br>PIETIIM  | g      | ç           | •     |               |
|                                       | 3      | ¥           | -     |               |
| ALL PELECYPODA                        |        |             |       | 358           |

| MACKUZUUBENIMUS PONKK GRAB COUNT DATA |            |      |             | 5/11/83                               |
|---------------------------------------|------------|------|-------------|---------------------------------------|
| DETROIT RIVER TRANSECT 18 STATION 3   |            |      |             |                                       |
| TAXON                                 | <b>3</b> - | 2    | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER            |
| 4.<br>A                               | ٥          |      | 0           | · · · · · · · · · · · · · · · · · · · |
| ALL CNIDARIA                          | •          | l    |             | : 3                                   |
| RHABDOCOELA                           | io.        | •    | <b>58</b>   | 289                                   |
| NEMATODA                              | 6          | ~    | =           | 011                                   |
| OLIGOCHAETA<br>SPIROSPERMA            | ō          | 8    | 37          |                                       |
| DTHER<br>ALL OLIGOCHAETA              | 2239 3077  | 3077 | 2           | 37753                                 |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA     | 6          | 0    | ٥           | 2                                     |
| ALL POLYCHAETA                        |            |      |             | 21                                    |
| COPEPODA CYCLOPOIDIDAE                | -          | -    | 0           |                                       |
| DIAPTOMUS                             | ō          | -    | ð           |                                       |
| HARPACTICOIDA                         | 0          | 0    | -           |                                       |
| LIMMOCALANUS                          | IO.        | 0    | 8           |                                       |
| OSTRACODA                             | 0          | 0    | 8           | <b>.</b>                              |
| TERRESTRIAL INSECT                    | 0          | 0    | -           | 7                                     |
|                                       |            |      |             |                                       |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA   |          |             |              | 5/11/83                 |
|---|----------|-------------|--------------|-------------------------|
| TRANSECT 18 STATION 3 (CONT'D)          |          |             |              |                         |
| TAXON                                   | GRA<br>A | GRAB COUNTS | STA.         | ESTIMATED NO./SQ. METER |
| DIPTERA                                 | •        | ~           | -            |                         |
| EPHEMERIDAE<br>EPHEMERIDAE<br>HEXAGENIA | 0        | 7           | 0            |                         |
| ALL EPHEMEROPTERA                       |          |             |              | 7                       |
| ACARINA                                 | 0        | 0           | -            | •                       |
| GASTROPODA<br>AMVICOLA                  | -        | 0           | c            |                         |
| GYRAULUS                                | •        | 0           | -            |                         |
| ALL GASTROPODA                          |          |             |              | *                       |
| PELECYPODA<br>Sphaeridae<br>Pisidium    | ď        | Œ           | <del>.</del> |                         |
| ALL PELECYPODA                          | •        | ,           | 2            | 17.2                    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |                |             |            | 5/11/83                    |
|---------------------------------------|----------------|-------------|------------|----------------------------|
| DETROIT RIVER TRANSECT 19 STATION 1   | GRAE           | GRAB COUNTS | NTS<br>3   | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 7              | -           | •          | 6                          |
| ALL CNIDARIA                          |                |             |            | 10<br>10                   |
| RHABDOCOELA                           | <b>8</b>       | 0           | ŧ.         | 523                        |
| NEMERTINEA                            | ō              | 0           | <b>I</b> O | 103                        |
| NEMATODA                              | 80             | 86          | 35         | 900                        |
| OLIGOCHAETA<br>Spirosperma            | 90             | 7           | <b>36</b>  |                            |
| OTHER<br>ALL OLIGOCHAETA              | =              | 5           | 391        | 7334                       |
| POLYCHAETA MANAYUMKIA SPECIOSA        | 80<br>80<br>80 | 99          | 216        | 8778<br>8778               |
| COPEPODA<br>CYCLOPS BICUSPIDATUS      | -              | -           | 0          |                            |
| DIAPTONUS                             | 6              | 10          | -          |                            |
| LIMNOCALANUS                          | •              | -           | -          | . 8                        |
| AMPHIPODA GAMMARUSALL AMPHIPODA       | И              | ~           | 6          | 4 4<br>8 60                |
|                                       |                |             |            |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |             |          | 5/11/83                    |
|---------------------------------------|----------|-------------|----------|----------------------------|
| TRANSECT 19 STATION 1 (CONT'D)        |          |             |          |                            |
| TAXON                                 | GRA!     | GRAB COUNTS | MTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| TERRESTRIAL INSECT                    | 7        | 0           | 0        | 14                         |
| DIPTERA                               |          |             |          |                            |
| CERATOPOGONIDAE                       | 26       | 33          | 33       |                            |
| CHINONOMIDAE<br>FABRICAN              | ÷.       | 7           | 5        | 289                        |
| ALL DIPTERA                           | <b>-</b> | 7           | 0        |                            |
|                                       |          |             |          | 2                          |
| CAENIDAE                              |          |             |          |                            |
| CAENIS                                | =        | æ           | -        |                            |
| RAFTISCIDAE                           |          | ٠           | •        |                            |
| BAETISCA                              | -        | 0           | c        |                            |
| All Coursessan                        |          | •           | )        |                            |
| ALL EFFERENCY ERA                     |          |             |          | 152                        |
| TRICHOPTERA<br>Hydropsychidae         |          |             |          |                            |
| HYDROPSYCHE                           | 0        | -           | -        |                            |
| HYDROPTILIDAE                         |          |             |          |                            |
| HYDROPTILA                            | c        | •           | c        |                            |
|                                       | •        |             | >        |                            |
| LEPTOCERIDAE<br>NECTORSYCHE           | (        |             |          |                            |
|                                       | >        | -           | -        |                            |
| OECETIS                               | •        | o           | c        |                            |
|                                       | ı        | •           | ,        |                            |
| ALL TRICHOPTERA                       |          |             |          | 98                         |
| ACARINA                               | c        | •           | c        | •                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |                  |       |      | 5/11/83  |
|---------------------------------------|------------------|-------|------|--|
| TRANSECT 19 STATION 1 (CONT'D)        | į                |       | į    |  |
|                                       | <del>3</del> -   | 4 2 3 | ) (N |  |
| GASTROPODA                            | (<br>}<br>!<br>! |       | #    | 1<br>6<br>1<br>1<br>2<br>2<br>3<br>4<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| AMNICOLA                              | 9                | ø     | 7    |  |
| ELIMIA LIVESCENS                      | -                | 0     | 8    |  |
|                                       | c                | -     | -    |  |
|                                       | ,                | •     | •    |  |
| PHYSA                                 | -                | 0     | -    |  |
| ALL GASTROPODA                        |                  |       |      | 213  |
| PELECYPODA                            |                  |       |      |  |
| SPHAERIIDAE<br>PISIDIUM               | 53               | 2     | 46   | 1033   |
| ALL PELECYPODA                        |                  |       |      | 1033   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |          |     | 5/11/83       |
|---------------------------------------|-----|----------|-----|---------------|
| DETROIT RIVER TRANSECT 19 STATION 2   | Ş   | 9        |     |               |
|                                       | ÷   | 1 2 3    | 2 6 | NO./SO. METER |
| CNIDARIA<br>HYDRA                     | -   | ED.      | 47  | 365           |
| ALL CNIDARIA                          |     |          |     | 365           |
| RHABDOCOELA                           | m   | 0        | ø   | 83            |
| NEMERTINEA                            | စ္တ | 6        | 47  | 661           |
| NEMATODA                              | ĸ   | 50       | 5   | 227           |
| OLIGOCHAETA<br>SPIROSPERMA            | 5   | ø        | =   |               |
| OTHER<br>ALL OLIGOCHAETA              | 276 | 204      | 283 | 4048          |
| POLYCHAETA<br>Manayunkia speciosa     | 782 | 782 1006 | 775 | 17664         |
| ALL POLYCHAETA                        |     |          |     | 17664         |
| CLADOCERA DAPHNIA                     | 0   | -        | -   | 7             |
| ALL CLADOCERA                         |     |          |     | 7             |

| TRANSECT 19 STATION 2 (CONT'D)  TAXON  TOPEDDA  CYCLOPS BICUSPIDATUS  TOTATIONIS  CYCLOPS BICUSPIDATUS  TOTATIONIS  CYCLOPS BICUSPIDATUS  TOTATIONIS   |   |      |    |           | }     |
|--|---|------|----|-----------|-------|
| S BICUSPIDATUS  S BICUSPIDATUS  ALAUST  TICOIDA  ALANAIS  CLOPS  EPODA  WINDAE  HIPODA  HIPODA | TRANSECT 18 STATION 2 (CONT'D)          | 8400 |    |           | 6     |
| S BICUSPIDATUS  S RICUSPIDATUS  TICOIDA  ALAMIS  ALAMI | NOX                                     | -    | 2  |           | METER |
| LOPS   | PODA                                    | •    | •  |           |       |
| LAMUS  A LACUSTRIS  A LACUSTRIS  A LACUSTRIS  1 0 0 1 3  LAMUS  LAMUS  LAMUS  LAMUS  LAMUS  LAMUS  LAMUS  LAMUS  AGONIDAE  FERA  GONIDAE  FERA  FERA  AMEROPTERA  MEROPTERA  MA  A  A  A  A  A  A  A  A  A  A  A   |   | •    | ,  | _         |       |
| COLORA   C   |   | 6    |    |           |       |
| LANUIS  ICOIDA  ICOIDA  ICOIDA  ICOIDA  ICOIDA  ILANUIS  S 2 4  O 1 3 2 4  O 1 0 1 0  IDAE  ERA  GONIDAE  ERA  TERA  DAE  IMEROPTERA  MEROPTERA  MA  A  A  A  A  A  A  A  A  A  A  A   | 4, 5 1 1 1 1                            |      |    |           |       |
| COIDA  | EPISHURA LACUSTRIS                      | -    | _  | •         |       |
| LAMIS   3 2 4   1  | *************************************** | ć    |    |           |       |
| LAMIS  LOPS  LOPS  LOPS  PODA  IPODA  GONIDAE  E RA  TERA  DAE  NA  A  A  A  A  A  A  A  A  A  A  A  A   | TAKFAC: ICOIDA                          | >    |    | _         |       |
| PODA      | LIMNOCALAMIS                            | က    |    | _         |       |
| COPS   | 1 |      |    |           |       |
| S  | PARACYCLOPS                             | 0    | -  | •         |       |
| S  |   |      |    | 4         |       |
| S  | ALL COPEPODA                            |      |    | 365       |       |
| S 0 0 1  IPODA GONIDAE E RA  TERA DAE IIA IIA IIA IIA IIA IIA IIA IIA IIA I  | AMPHIPODA                               |      |    |           |       |
| PHIPODA PHIPODA POGONIDAE OMIDAE DAE PTERA OPTERA RIDAE ENIA CIDAE CIDAE CIDAE ODA HEMEROPTERA 3 5 0 1 0 2   | GAMMARUS                                | 0    | 0  |           |       |
| PHIPODA PUGONIDAE OMIDAE OMIDAE DAE DAE BAE BAE BAE BAE BAE BAE BAE BAE BAE B  |   |      |    | 1         |       |
| POGONIDAE  OMIDAE  DAE  PTERA  OPTERA  OPTERA  RIDAE  ENIA  CIDAE  SCA  HEMEROPTERA  A LIVESCENS  1 0 2 1 0 1 0 1 0 1 0 2 1 0  | ALL AMPHIPODA                           |      |    | 4         |       |
| POGGNIDAE  DMIDAE  DMIDAE  DAE  PTERA  PTERA  POPTERA  RIDAE  CIDAE  CIDAE  CIDAE  ODA  A LIVESCENS  1 0 2  1 0  1 0  2 1  1 0  2 1  1 0  2 1  1 0  2 1  1 0  2 1  1 0  2 1  2 1   | DIPTERA                                 |      |    |           |       |
| PTERA BY CO 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | CERATOPOGONIDAE                         | 0    |    |           |       |
| PTERA 0 2 1 0 1 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0  | CHIRONOMIDAE                            | - •  |    |           |       |
| DTERA 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | EMPIDIDAE                               | -    |    |           |       |
| 0 2 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | ALL DIPTERA                             |      |    | 7         |       |
| AE AE AE AE BOPTERA 1 0 2 1 AE TOTAL AE A  | EPHEMEROPTERA                           |      |    |           |       |
| EROPTERA  1 O 1 O 1 O 1 O 1 O 1 O 1 O 1 O 1 O 1  | EPHEMERIDAE                             | •    | ·  |           |       |
| AE   | MEXAGENIA                               | >    | •  | -         |       |
| EROPTERA  1 O 1 O 1 O 1 O 1 O 2 O 1 O  | RAFTISCIDAF                             |      |    |           |       |
| EROPTERA  3 5 0  IVESCENS 1 0 2  | BAETISCA                                | 0    | -  | •         |       |
| EROPTERA  3 15 0  IVESCENS  1 0 2  | 111111111111111111111111111111111111111 |      |    | •         |       |
| 3 5 0 IVESCENS 1 0 2   | ALL EPHEMEROPTERA                       |      |    | <b>58</b> |       |
| IVESCENS 1 0 2   | GASTROPODA                              |      |    |           |       |
| ENS 1 0 2  | AMNICOLA                                | ю    | ND | 0         |       |
|  | FLIEIA LIVESCENS                        | -    | 0  | ~         |       |
|  |   |      |    | ř         |       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             | 5/11/83       |
|---------------------------------------|-----|-------------|---------------|
| TRANSECT 19 STATION 2 (CONT'D)        |     |             |               |
| TAXON                                 | GRA | GRAB COUNTS | ESTIMATED     |
| NO./SQ. METER                         | - : | E 7         | NO./SQ. METER |
| PELECYPODA                            |     | /           |               |
| SPHAERIIDAE                           |     |             |               |
| PISIDIUM                              | *   |             | ;             |
|                                       | 0   | S           | 337           |
| ALL PELECYDONA                        |     |             |               |
|                                       |     |             | 337           |

|                                     |            |            |           | 20/11/0       |
|-------------------------------------|------------|------------|-----------|---------------|
| DETROIT RIVER TRANSECT 19 STATION 3 | Ę          |            |           |               |
|                                     | <b>5</b>   | 5 ~<br>2   | 2 60      | NO./SO. METER |
| CNIDARIA<br>Hydra                   | 167        | 79         | <b>\$</b> | 1818          |
| ALL CNIDARIA                        |            |            |           | 1818          |
| RHABDOCOELA                         | 0          | 9          | 0         | 207           |
| NEMERTINEA                          | 4          | 8          | 8         | 1095          |
| NEMATODA                            | 7          | 8          | y         | 103           |
| OLIGOCHAETA<br>Nais                 | 0          | ٥          | -         |               |
| SPIROSPERMA                         | 0          | <b>8</b>   | 27        |               |
| OTHER<br>ALL OLIGOCHAETA            | <b>56</b>  | 108        | <b>‡</b>  | 6157          |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA   | -          | 的          | -         | \$            |
| ALL POLYCHAETA                      |            |            |           | <b>4</b>      |
| CL ADOCERA<br>DAPHRIA               | -          | .•         | ٥         | <b>‡</b>      |
| ALL CLADOCERA                       |            |            |           | . 4           |
| COPEPODA CYCLOPS BICUSPIDATUS       | ю          | <b>s</b> n | •         |               |
| DIAPTOMUS                           | <b>I</b> D | NO.        | ო         |               |
| LIMNOCALANUS                        | 0          | e          | 8         |               |
| ALL COPEPODA                        |            |            |           | 179           |

(

| MACKUZUOBENTHUS PUNAR GRAB COUNT DATA     |      |           |          | 5/11/83         |
|---|------|-----------|----------|-----------------|
| TRANSECT 19 STATION 3 (CONT'D)            | 3400 | 2 a 4 0 0 | 217      | 44              |
|   |      | 3 ~       | ი ო<br>E | NO. / SQ. METER |
| ERRESTRIAL                                | 0    | -         | 0        | 7               |
| DIPTERA<br>CHIRONOMIDAE                   | m    | -         | 0        | <b>58</b>       |
| EPHEMEROPIERA<br>EPHEMERIDAE<br>HEXAGENIA | -    | 0         | 0        |                 |
| ALL EPHEMENOFIERA<br>LEPIDOPTERA          | 0    | -         | 0        |                 |
| TRICHOPTERA<br>Hydropsyche<br>Hydropsyche | ٥    | +         | -        |                 |
| POLYCENTROPUS<br>POLYCENTROPUS            | 0    | 8         | 0        |                 |
| ALL TRICHOPTERA                           |      |           |          | 28              |
| GASTROPODA<br>AMNICOLA                    | -    | ю         | 0        |                 |
| ELIMIA LIVESCENS                          | •    | 7         | 0        |                 |
| FERISSIA<br>                              | 0    | 8         | 0        |                 |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM     | •    | 8         | 0        |                 |
| ALL PELECYPODA                            |      |           |          | 7               |

|                 | 5/11/83 |  |
|-----------------|---------|--|
|                 |         |  |
|                 |         |  |
| 4               |         |  |
| TIMES OF SELECT | 5       |  |
|                 | į       |  |
|                 | 5       |  |
| PODE FILTERS    |         |  |

| MACKUZUUBENINUS PUNAK GRAB COUNT DATA              | GRAB COUNT DATA                                     |            |            |       | 5/11/83                 |
|--|---|------------|------------|-------|-------------------------|
| DETROIT RIVER TRAI                                 | TRANSECT 20 STATION 1                               | 5          | Š          |       |                         |
| TAXON  |   | <b>5</b> – | 7 7 7 E    | 1 2 3 | ESTIMATED NO./SQ. METER |
| CNIDARIA<br>HYDRA                                  | 4 4 4 8 7 7 8 4 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | •          | <b>5</b> 5 | 68    | 751                     |
| ALL CNIDARIA                                       | •   |            |            |       | 751                     |
| RHABDOCOELA  |   | 40         | Ξ          | 8     | 778                     |
| NEMERTINEA   |   | 0          | ~          | 0     | 7                       |
| NEMATODA   |   | <b>5</b> 6 | €          | 102   | 937                     |
| OLIGOCHAETA<br>Nais                                |   | 0          | 8          | 0     |                         |
| SPIROSPERMA  |   | £          | 22         | 30    |                         |
| OTHER<br>ALL OLIGOCHAETA                           |   | 182        | 346        | 2872  | 24833                   |
| MANAYUMKIA SPECIOSA  LE POLYCHAETA  ALL POLYCHAETA |   | <u></u>    | 7          | 32    | 99 89<br>80 89<br>80 89 |
| COPEPODA   |   | 4          | 0          | •     |                         |
| HARPACTICOIDA                                      |   | 7          | 0          | •     |                         |
| ALL COPEPODA                                       |   |            |            |       | 138                     |
| AMPHIPODA  |   | *          | 6          | •     |                         |
| HYALELLA AZTECA                                    |   | 6          | e          | 0     |                         |
| ALL AMPHIPODA                                      |   |            |            |       | 145                     |

| MACRUZUOBENTHOS PUNAR GRAB CUUNI DATA            |          |   |            | 5/11/83       |
|--|----------|---|------------|---------------|
| TRANSECT 20 STATION 1 (CONT'D)                   | 1400     | 2 A A B B B B B B B B B B B B B B B B B |            | Catalities    |
| TAXON  | -        | 200                                     | <u>.</u> ພ | NO./SQ. METER |
| I SOPOOA   | +        | ,                                       | •          |               |
|  | •        | •                                       | •          | :             |
| ALL ISOPODA                                      |          |   |            | 2.            |
| TERRESTRIAL INSECT                               | 8        | 0                                       | 0          | *             |
| DIPTERA  | •        |   |            |               |
| CERATOPOGONIDAE CHIRONOMIDAE                     | a Č      | o <b>ā</b>                              | 7 I        | 109           |
| EMPIDIDAE<br>ALL DIPTERA                         | <b>-</b> | 0                                       | 0          | 171           |
| EPHEMEROPTERA                                    |          |   |            |               |
| CAENIDAE<br>CAENIS                               | •        | •                                       | -          |               |
| BAETISCIDAE                                      |          |   |            |               |
| BAETISCA   | 0        | -                                       | 0          |               |
| ALL EPHEMEROPTERA                                |          |   |            | 110           |
| LEPIDOPTERA                                      | •        | 7                                       | 8          | 28            |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHRIMATINGSYCHE | . •      | c                                       | c          |               |
| POLYCENTROPODIDAE                                | •        | •                                       |            |               |
| NEURECLIPSIS<br>                                 | -        | N                                       | -          | 7             |
| ODONATA<br>COENAGDI INITIAE                      | c        | c                                       | -          | •             |

| tita into and the second second       |      |             |     | 29/11/6                    |
|---------------------------------------|------|-------------|-----|----------------------------|
| TRANSECT 20 STATION ! (CONT.D)        |      |             |     |                            |
| TAXON                                 | GRAB | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER |
| ACARINA                               | -    | 8           | 9   | 103                        |
| GASTROPODA<br>AMNICOLA                | en.  | ø           | 7   |                            |
| ELIMIA LIVESCENS                      | •    | 6           | -   |                            |
| FERISSIA                              | -    | 0           | 0   |                            |
| GYRAULUS                              | -    | 4           | 0   |                            |
| PHYSA                                 | -    | 6           | 6   |                            |
| ALL GASTROPODA                        |      |             |     | 296                        |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | 4    | <b>c</b>    | 1   | 344                        |
| ALL PELECYPODA                        |      |             |     | 344                        |
|                                       |      |             |     |                            |

B-175

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | S COUNT DATA          |     |             |      | 5/11/83       |
|---------------------------------------|-----------------------|-----|-------------|------|---------------|
| DETROIT RIVER TRANSE                  | TRANSECT 20 STATION 2 | 8   | GRAB COUNTS | STAC | ESTIMATED     |
| TAXON                                 |                       | -   | 8           | 0    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     |                       | 7   | ~           | 5    | 1             |
| ALL CNIDARIA                          |                       |     |             |      | 110           |
| NEMERTINEA                            |                       | 7   | e           | -    | ţ             |
| NEMATODA                              |                       | 314 | 262         | 79   | 4511          |
| OLIGOCHAETA<br>Nais                   | •                     | 0   | ĸ           | 0    |               |
| SPIROSPERMA                           |                       | 19  | -           | ĸ    |               |
| OTHER<br>ALL OLIGOCHAETA              |                       | 136 | 5           | 4    | 2025          |
| POLYCHAETA<br>Manayumkia speciosa     |                       | 0   | -           | 8    | 21            |
| ALL POLYCHAETA                        |                       |     |             |      | 21            |
| CLADOCERA<br>DAPHNIA                  |                       | 8   | 0           | 8    | <b>58</b>     |
| ALL CLADOCERA                         |                       |     |             |      | 2 <b>8</b>    |
|                                       |                       | -   | -           | 0    |               |
| DIAPTONUS                             |                       | *   | 0           | 8    |               |
| LIMNOCALANUS                          |                       | 4   | g           | -    |               |
| ALL COPEPODA                          |                       |     |             |      | 131           |
| DIPTERA<br>CHIRONOMIDAE               |                       | ø   | 4           | -    | 76            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |        |        | 5/11/83                               |
|---------------------------------------|------|--------|--------|---------------------------------------|
| TRANSECT 20 STATION 2 (CONT'D)        | į    | 3      |        |                                       |
| TAXON                                 | š -  | 1 2 3  | ) (C)  | NO./SO. METER                         |
| EPHEMEROPTERA<br>EPHEMERIDAE          | <br> | ;<br>; | ;<br>; | * * * * * * * * * * * * * * * * * * * |
| TEXAGENIA                             | -    | ٥      | 0      |                                       |
| ALL EPHEMEROPTERA                     |      |        |        |                                       |
| TRICHOPTERA<br>HYDROPSYCHIDAE         | •    | •      | •      |                                       |
| HYDROPSYCHE                           | 0    | 0      | N      |                                       |
| ALL TRICHOPTERA                       |      |        |        | 4                                     |
| ACARINA                               | 0    | 0      | •      | •                                     |
| GASTROPODA<br>ELIMIA LIVESCENS        | -    | ٥      | •      | 34                                    |
| ALL DAGGEORY                          |      |        |        | 76                                    |

| MACKULUGERINUS                    | MACKULUDENINUS PUNAK GRAB CUUNI UAIA |          |           |     | 5/11/83       | <b>.</b> |
|-----------------------------------|--------------------------------------|----------|-----------|-----|---------------|----------|
| DETROIT RIVER                     | TRANSECT 20 STATION 3                | Š        | 9         |     |               |          |
| TAXON                             |                                      | <b>.</b> | 1 2 3     | 20  | NO./SQ. METER | ETER     |
| CNIDARIA<br>HYDRA                 | ; 1                                  | 5        | 99        | 480 | 4516          | :        |
| ALL CHIDARIA                      |                                      |          |           |     | 4518          |          |
| RHABDOCOELA                       |                                      | 0        | -         | -   | 7             |          |
| NEMERTINEA                        |                                      | •        | ^         | 58  | 303           |          |
| NEMATODA                          | •                                    | 7        | 5         | 25  | 303           |          |
| OL I GOCHAETA<br>SP I ROSPERMA    |                                      | 0        | 7         | 8   |               |          |
| OTHER<br>ALL OLIGOCHAETA          |                                      | 28       | <b>10</b> | 91  | 1054          |          |
| POLYCHAETA<br>Manayunkia speciosa | VS013                                | 78       | 28        | 32  | 998           |          |
| ALL POLYCHAETA                    | 1                                    |          |           |     | 920           |          |
| CLADOCERA<br>BOSMINA              |                                      | 0        | -         | 0   |               |          |
| DAPHNIA                           |                                      | -        | N         | N   |               |          |
| ALL CLADOCEDA                     |                                      |          |           |     | ;             |          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |      |             |            | 5/11/83       |
|---|------|-------------|------------|---------------|
| TRANSECT 20 STATION 3 (CONT'D)                  | GRAB | GRAB COUNTS | T.S        | ESTIMATED     |
| TAXON   | -    | 7           | 6          | NO./SQ. METER |
| OIDIDAE   | 0    | 7           | 0          |               |
| CYCLOPS BICUSPIDATUS                            | •    | 0           | <b>6</b> 7 |               |
| DIAPTOMUS                                       | •    | -           | ø          |               |
| LIMNOCALANUS                                    | ю    | <b>6</b>    | ~          |               |
| ALL COPEPODA                                    |      |             |            | 269           |
| TERRESTRIAL INSECT                              | 0    | 0           | -          | 7             |
| DIPTERA<br>CHIRONOMIDAE                         | 6    | ٥           | 9          | ÷             |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA       | 0    | -           | 0          |               |
| BAETISCIDAE<br>BAETISCA                         | 0    | ~           | 10         |               |
| ALL EPHEMEROPTERA                               |      |             |            | <b>10</b>     |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | a    | 0           | 4          |               |
| HYDROPSYCHE                                     | •    | NO.         | 7          |               |
| LEPOCERIDAE                                     | 0    | -           | 0          |               |
| ALL TRICHOPTERA                                 |      |             |            | 131           |
| PELECYPODA<br>SPHAERIDAE<br>PISIDIUM            | 0    | +           | 0          | ۲             |
| ALL PELECYPODA                                  |      |             |            | •             |

| DETROIT RIVER TRANSECT 21 STATION 1 |            | GRAB COUNTS | STNI | ESTIMATED     |
|-------------------------------------|------------|-------------|------|---------------|
| TAXON                               | <b>5</b> — | 7           | 6    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                   | 11         | =           | 25   | 365           |
| ALL CNIDARIA                        |            |             |      | 365           |
| RHABDOCOELA                         | 72         | 51          | 62   | 1274          |
| NEMERTINEA                          | 8          | N           | 6    | 48            |
| NEMATODA                            | . 73       | 62          | 32   | 1150          |
| OL JGDCHAETA<br>SPIROSPERMA         | 99         | 72          | 7    |               |
| OTHER<br>ALL OLIGOCHAETA            | 430        | 430 1017    | 356  | 13608         |
| POLYCHAETA MANAYUMKIA SPECIOSA      | Œ          |             | ž.   | 1088          |
| CLADOCERA DAPHNIAALL CLADOCERA      | •          | 0           | -    | r r           |
| COPEPODA<br>CYSLOPOIDIDAE           | •          | 0           | -    |               |
| DIAPTOWAS                           | -          | 0           | 6    |               |
| LIMNOCALANUS                        | 2          | 0           | ø    | ٠             |
| ALL COPEPODA                        |            |             |      | 8             |

| GRAB COUNTS ESTIMA<br>1 2 3 NO./SO.<br>0 0 1 7<br>7 7<br>7 7<br>8 2 0 0 14<br>1 0 2 21<br>4 18 8<br>1 0 0 1<br>1 0 0 2<br>14<br>1 0 0 0<br>1 10 0<br>1 0 0<br>1 0 0<br>1 14<br>1 0 0 0<br>1 0 | MACROZOOBENTHOS PONAR GRAB COUNT DATA  |            |                       |           | 5/11/83                    |
|---|--|------------|-----------------------|-----------|----------------------------|
| AE  ONIDAE  OPTERA  SINCERA  SINCERA  AE  STANDAL  GRAB COUNTS  FESTIAN  1 2 3 ND./50.  0 0 1 7  7  7  8 4 18 8  1 0 0 0  1 1 0 2  2 1  0 0 1  1 0 0 2  2 21  2 20  0 0 1  4 18 8  1 0 0 0  1 0   | TRANSECT 21 STATION 1 (CONT'D)   |            | •                     |           |                            |
| AE  | TAXON  | <b>8</b> ~ | 2<br>2<br>2<br>3<br>4 | JATS<br>3 | ESTIMATED<br>NO./SQ. METER |
| A DAE   | OSTRACODA  | 0          | 0                     | -         | 7                          |
| DNIDAE DNE RA A A BAE RA A A BAE RA A A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A B B A B A B A B A B B A B A B B A B A B   | AMPHIPODA  | •          | •                     | •         |                            |
| ONIDAE  ONIDAE  BAA  A A  OPTERA  OPTERA  1 0 0  1   | SATE AND A STATE OF THE STATE O | 0          | 0                     | -         | 7                          |
| DAIDAE  DAE  RA  A  A  OPTERA  OPTERA  SINCERA  OPODA  OPODA  A  T  T  T  T  T  T  T  T  T  T  T  T   | ALL AMPHIPODA  | •          |                       |           | 7                          |
| ONIDAE  BAA  A A DAE  BAA  OPTERA  OPTERA  SINCERA  TO 0  TO 0  TO 0  A A A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A B A A B B A B A B A B A B B A B A B   | DIPTERA  |            |                       |           |                            |
| DAE RA A DAE DAE  STINCERA DOTERA  TO 0  T  | CERATOPOGONIDAE  | 7          | 0                     | 0         |                            |
| A 18 8 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | CHIRONOMIDAE<br>All diptera  | 0          | <b>6</b>              | 8         | 34                         |
| DAE  OPTERA  1 0 2  1 0 2  INCERA  SINCERA  OPODA  AE  5 17 34 31   | TRICHOPTERA  |            |                       |           |                            |
| OPTERA  1 0 2  1 0 2  1 0 0  1  | LEPTOCERIDAE   |            |                       |           |                            |
| OPTERA  1 0 2  1 0 2  1 0 0 0  1 0 0   | OECETIS  | 8          | 0                     | 0         |                            |
| 1 0 2 4 18 8 1 0 0  | ALL TRICHOPTERA  |            |                       |           | 7                          |
| 5 17 34   | ACARINA  | -          | 0                     | 8         | 21                         |
| SINCERA 2 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0   | ASTROCOL   |            |                       |           |                            |
| 1 0 0 5 INCERA CONTINUE PA CON  | AMNICOLA   | 4          | <u>~</u>              | 60        |                            |
| SINCERA 2 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0   |  | •          | •                     | •         |                            |
| SINCERA 2 0 0 1 OPODA AE 5 17 34  | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | -          | >                     | >         |                            |
| SINCERA 2 0 0 OPODA AE 5 17 34  | PHYSA  | 0          | 0                     | -         |                            |
| SINCERA 2 0 0 OPODA AE 5 17 34  | .,   |            |                       |           |                            |
| OPODA<br>AE 5 17 34   | VALVATA SINCERA  | a          | 0                     | 0         | ٠                          |
| AE 5 17 34  | ALL GASTROPODA   |            |                       |           | 234                        |
| AE 5 17 34  | PELECYPODA   |            |                       |           |                            |
| 46 71 34  | SPHAERIIDAE  |            |                       |           |                            |
|   | PISIDIUM   | <b>K</b> D | 11                    | 34        | 386                        |
|   |  |            |                       |           |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | SRAB COUNT DATA       |              |             |      | 5/11/83       |
|---------------------------------------|-----------------------|--------------|-------------|------|---------------|
| DETROIT RIVER TRAN                    | TRANSECT 21 STATION 2 | 9            | STMINO BAGS | 2 LA | CATAMITED     |
| TAXON                                 |                       | <del>-</del> |             | , e  | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     |                       | 8            | 430         | 80   | 3836          |
| ALL CNIDARIA                          |                       |              |             |      | 3836          |
| TRICLADIDA                            |                       | W            | -           | ٥    | 21            |
| NEMERTINEA                            | •                     | -            | 9           | ٥    | 48            |
| NEMATODA                              | •                     | 43           | 32          | 7    | 565           |
| OLIGOCHAETA<br>Spirosperma            |                       | -            | 0           | 0    |               |
| OTHER<br>ALL OLIGOCHAETA              |                       | <b>8</b>     | 7           | 34   | 558           |
| • • •                                 |                       | <b>8</b> 3   | 30          | 8    | 647           |
| ALL POLYCHAETA                        |                       |              |             |      | 647           |
| CLADOCERA<br>DAPHNIA                  |                       | -            | 0           | N)   | \$            |
| ALL CLADOCERA                         |                       |              |             |      | 7             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |       |     |      | 5/11/83                 |
|---|-------|-----|------|-------------------------|
| TRANSECT 21 STATION 2 (CONT'D)          | 6     | Š   | 4    |                         |
| TAXON                                   | 1 2 3 | 2 6 | / (P | ESTIMATED NO./SQ. METER |
| 10101                                   |       |     |      | <br>                    |
|   | 3     | >   | >    |                         |
| CYCLOPS BICUSPIDATUS                    | ٥     | 7   | ٥    |                         |
| DIAPTOMUS                               | 4     | n   | -    |                         |
| *****                                   |       |     |      |                         |
| HARPACTICOIDA                           | -     | 0   | 0    |                         |
| LIMNOCALANUS                            | ø     | -   | មា   |                         |
| ALL COPEDOA                             |       |     |      | 213                     |
| AMPHIPODA                               | •     | •   | •    | ı                       |
| GARTARUS                                | 0     | -   | 0    |                         |
| ALL AMPHIPODA                           |       |     |      | ^                       |
| DIPTERA                                 |       |     |      |                         |
| CHIRONOMIDAE                            | -     | -   | -    | 21                      |
| EPHEMEROPTERA                           |       |     |      |                         |
| EPHEMERIDAE<br>Heyadenia                | c     | •   | •    |                         |
| 111111111111111111111111111111111111111 | •     | -   | -    |                         |
| BAETISCIDAE                             |       |     |      |                         |
| BART I SCA                              | 0     | -   | -    |                         |
| ALL EPHEMEROPTERA                       |       |     |      | . 4                     |
| TRICHOPTERA                             |       |     |      |                         |
| HYDROPSYCHIDAE                          | •     | •   |      |                         |
|   | >     | •   | D    |                         |
| LEPTOCERIDAE                            |       |     |      |                         |
| CERACLEA                                | 0     | 0   | 7    |                         |
| OECET1S                                 | -     | 0   | 0    |                         |
|   |       | ,   | )    |                         |
| ALL TRICHOPTERA                         |       |     |      | <b>%</b>                |
| GASTROPODA                              | •     | •   | ď    | ;                       |
| ELIMIA LIVESCENS                        | -     | -   | 0    | 4                       |
| -                                       |       |     |      | 4                       |
|   |       |     |      |                         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | R GRAB COUNT DATA     |     |             |     | 5/11/83       |
|---------------------------------------|-----------------------|-----|-------------|-----|---------------|
| DETROIT RIVER TO                      | TRANSECT 21 STATION 3 | 8.  | GRAB COUNTS | NTS | ESTIMATED     |
| NOVAL                                 |                       | -   | 2           | 6   | NO./SQ. METER |
| CNIDARIA<br>Hydra                     |                       | 386 | 622         | 78  | 7479          |
| ALL CNIDARIA                          |                       |     |             |     | 7479          |
| TRICLADIDA                            |                       | -   | 0           | 0   | 7             |
| NEMERTINEA                            |                       | 12  | o           | 0   | 145           |
| NEMATODA                              | •                     | 4   | 50          | ស   | 200           |
| OLIGOCHAETA<br>Spirosperma            |                       | 0   | 0           | -   |               |
| OTHER<br>ALL OLIGOCHAETA              |                       | 22  | 39          | 11  | 544           |
| POLYCHAETA<br>Manayunkia speciosa     |                       | 32  | 108         | 0   | 964           |
| ALL POLYCHAETA                        |                       |     |             |     | 964           |
| CLADOCERA<br>BOSMINA                  |                       | -   | 0           | 0   |               |
| DAPHNIA                               |                       | -   | 0           | 8   |               |
| ALL CLADOCERA                         |                       |     |             |     | 28            |
| COPEPODA<br>CYCLOPS BICUSPIDATUS      | Si                    | 8   | ღ           | 0   |               |
| DIAPTOMUS                             | !                     | -   | 7           | 0   |               |
| LIMNOCALANUS                          |                       | 0   | 8           | -   |               |
| ALL COPEPODA                          |                       |     |             |     | 110           |
|                                       |                       |     |             |     |               |

| TRANSECT 21 STATION 3 (CONT'D)                  | GRA        | 200      | NTS. | FSTIMATED     |
|---|------------|----------|------|---------------|
| TAXON   | -          | 1 2 3    | 9    | NO./SQ. METER |
| AMPHI PODA<br>GAMMARUS                          | 0          | -        | 0    | ۲             |
| ALL AMPHIPODA                                   |            |          |      | •             |
| DIPTERA<br>CHIRONDMIDAE                         | 6          | •        | 0    | 84            |
| EPHEMEROPTERA<br>Caenidae<br>Caenis             | c          | -        | c    |               |
| EPHEMERIDAE<br>HEXAGENIA                        | • •        | -        |      |               |
| BAETISCIDAE<br>BAETISCA                         | ~ ~        | ٥        | -    |               |
| HEPTAGENIDAE<br>Stendnema                       | 0          | 7        | 0    |               |
| ALL EPHEMEROPTERA                               |            |          |      | 48            |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | <b>s</b> n | <b>‡</b> | -    |               |
| HYDROPSYCHE                                     | 0          | -        | 0    | •             |
| ALL TRICHOPTERA                                 |            |          |      | 145           |
| ACARINA   | -          | 0        | -    | 4             |
| GASTROPODA<br>AMVICOLA                          | 8          | 0        | 0    |               |
| 1   | 0          | -        | 0    |               |
| FERISSIA  | -          | 0        | 0    |               |
| ALL GASTROPODA                                  |            |          |      | a c           |

| 5/11/83   | GRAB COUNTS ESTIMATED 1 2 3 NO./SQ. METER |            |             | •        | - | (         |   | ,               | 124            |
|---|---|------------|-------------|----------|---|-----------|---|-----------------|----------------|
|   | RAB C                                     |            |             | 1        | • | C         | • |                 |                |
| MACROZOGENTHOS PONAR GRAB COUNT DATA TRANSECT 21 STATION 3 (CONT'D) | TAXON                                     | PELECYPODA | SPHAERIIDAE | PISIDION |   | SPHAERIUM |   | ALL SPHAERIIDAE | ALL PELECYPODA |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA    | DATA             |          |             |          | 10/11/83                   |
|--|------------------|----------|-------------|----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 1 STATION TAXON | STATION 1        | GRA<br>+ | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CLADOCERA BUSMINA                        | ;<br>;<br>;<br>; | -        | ٥           | 0        | 1                          |
| DAPHNIA                                  | •                | 5        | 26          | 35       |                            |
| ALL CLADOCERA                            |                  |          |             |          | 778                        |
| COPEPODA<br>CYCLOPOIDIDAE                |                  | 7        | 0           | 0        |                            |
| DIAPTOMUS                                |                  | -        | 60          | un un    |                            |
| EPISHURA LACUSTRIS                       |                  | Ξ        | 0           | 0        |                            |
| ALL COPEDODA                             |                  |          |             |          | 183                        |
| TERRESTRIAL INSECT                       |                  | ₩.       | 0           | -        | 62                         |
| DIPTERA                                  |                  | <b>~</b> | 18 13 12    | 5        | 986                        |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |           |             |     | 10/11/83                   |
|---------------------------------------|-----------|-------------|-----|----------------------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 2  |           |             |     | :                          |
| TAXON                                 | GRAE<br>- | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER |
| CLADOCERA                             | 7         | -           | -   |                            |
| DAPHNIA GALEATA MENDOTAE              | , •       | , 0         | . Š |                            |
| DAPHNIA PULEX                         | 0         | 0           | •   |                            |
| ALL CLADGCERA                         |           |             |     | 80<br>80<br>80             |
| COPEPODA DIAPTOMUS                    | NO.       | Ť.          | 0   |                            |
| EPISHURA LACUSTRIS                    | 9         | 5           | 00  |                            |
| LIMUCALANUS                           | 0         | 0           | -   |                            |
| ALL COPEPODA                          |           |             |     | 388                        |
| TERRESTRIAL INSECT                    | 8         | 0           | 0   | 7                          |
| DIPTERA                               | 11        | 7           | 9   | 386                        |

| A CUSTRIS COUNTS  1 2 3 3 4 4 4 6 6 6 13 6 13 6 13 6 13 6 13   | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |        |          | 10/11/83                   |
|--|---|-----|--------|----------|----------------------------|
| ASOMA  LOCERA  LACUSTRIS  A LACUSTRIS  CA 1 0  CANUS  CA LACUSTRIS  CA L |   | GR/ | Se COL | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| NASOMA  NASOMA  DIUM  DOCERA  DOCERA  MUS  RA LACUSTRIS  O 3 O ALANUS  EPODA  ATANUS   |   | 0,0 | 36     | 37       |                            |
| DIUM DOCERA  DOCERA  MUS  RA LACUSTRIS  O 3 0  ALANUS  EPUDA  RA 13 33   | AMON AMON AMON AMON AMON AMON AMON AMON | -   | 0      | . •      |                            |
| DOCERA  DOCERA  MUS  RA LACUSTRIS  CO 3 0  ALANUS  CPUDA  EPUDA  30 6 13 33  | HOLOPEDIUM                              | 0   | -      | 0        |                            |
| RA LACUSTRIS 0 3 0 ALANUS EPUDA MIDAE  | ALL CLADOCERA                           |     |        |          | 585                        |
| URA LACUSTRIS 0 3 0  CALANUS 0 1 0  CALANUS 0 1 0  PEPUDA 30 6 13 3  | COPEPODA<br>Diaptomus                   | 8   | 4      | -        |                            |
| CALANUS CALANUS PEPUDA PARDAS AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA   | EPISHURA LACUSTRIS                      | 0   | 60     | 0        |                            |
| PEPUDA 30 6 13 3   | LIMNOCALANUS                            | 0   | -      | 0        |                            |
| 30 A 13  | ALL COPEPODA                            |     |        |          | 76                         |
|  | DIPTERA                                 | S   |        | 5        | 337                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA  |          |          |            | 10/11/83      |
|--|----------|----------|------------|---------------|
| ST. CLAIR RIVER TRANSECT 2 STATION 1   | ē        | 5        | 9          | 200           |
| TAXON                                  | <b>-</b> | 1 2 3    | n m        | NO./SQ. METER |
| CNIDARIA<br>HYDRA                      | 27       | 8        | 85         | 1391          |
| ALL CNIDARIA                           |          |          |            | 1391          |
| RHABDOCDELA                            | 7        | 0        | =          | 186           |
| NEMERTINEA                             | m        | -        | 8          | 7             |
| NEMATODA                               | ო        | 9        | 4          | 158           |
| HIRUDINEA<br>ERPOBDELLIDAE             | 0        | -        | 0          |               |
| GLOSSIPHONIDAE<br>HELOBDELLA PAPILLATA | 0        | 0        | -          |               |
| PISCICOLIDAE<br>PISCICOLA              | ٥        | -        | ٥          |               |
| ALL HIRUDINEA                          |          |          |            | 21            |
| OLIGOCHAETA<br>Nais                    | 0        | ‡        | 0          |               |
| SPIROSPERMA                            | 0        | 38       | <b>I</b> D |               |
| STYLARIA                               | 8        | 8        | 6          |               |
| OTHER<br>ALL OLIGOCHAETA               | 465      | <b>‡</b> | 322        | 9184          |

| TRANSECT 2 STATION 1 (CONT'D)  TRANSECT 2 STATION 1 (CONT'D)  TAXON  TAXON  CLADGCERA  DAPHAIA  SIDA CRYSTALLINA  ALL CLADGCERA  CDEPODA  ALL CLADGCERA  ALL COPEDDA  ALL COPEDDA  AND //SO. METE  DAPHAIA  SIDA CRYSTALLINA  O 2 2  DIAPTOMUS  EPISHURA  COPEDDA  AND //SO. METE  DAPHAIA  O 2 2  O 16  O 2 0  O 14  AND //SO. METE  DAPHAIA  O 2 2  O 16  O 2 0  O 14  AND //SO. METE  DAPHAIA  O 2 2  O 16  O 2 0  O 14  AND //SO. METE  DAPHAIA  O 2 2  O 16  O 2 0  O 14  AND //SO. METE  DAPHAIA  O 2 2  O 16  O 2 0  O 3 0  O 3 0  O 3 0  O 3 0  O 3 0  O 3 0  O 3 0  O 3 0  O 40  O 40  O 40  O 50  O 50  O 60  O  | YSTALLINA OCERA OCERA LACUSTRIS ICOIDA PODA S A AZTECA                                    | 83 5 5 7 5 6 | 26 26 17 10 0  | ESTIMATED NO./SQ. METER SS.1   |
|--|---|--|----------------|--|
| YSTALLINA OCERA OCCERA OCCE | YSTALLINA OCERA LACUSTRIS ICOIDA PODA A AZTECA  | 3 2 2 2 2  |                |  |
| YSTALLINA  YSTALLINA  OCERA  OCERA  A LACUSTRIS  A LACUSTRIS  A LACUSTRIS  A LACUSTRIS  A AZTECA  PODA  O 2 0  O 2 0  IT 21 19  TERA  O 2 0  O 2 0  O 2 0  TERA  O 2 0  O 2 0  O 2 0  IT 21 19  O 3 0  IT 31  O 4 0 0 2  IT 31  O 5 0 0  IT 31  O 6 0 2 1  | OCERA OCERA OCERA LACUSTRIS ICOIDA ODA SA AZTECA  | 2 C C C C C C C C C C C C C C C C C C C  | 9 7 9 0 0      | 55<br>52<br>53<br>54<br>54<br>54<br>54<br>54<br>54<br>54<br>54<br>54<br>54<br>54<br>54<br>54 |
| RYSTALLINA   | RYSTALLINA  BOCERA  MUS  RA LACUSTRIS  TICOIDA  EPODA  A  A  A  A  A  A  A  A  A  A  A  A | , , , , ,  | , ñ t o o      | 55 55 55 55 55 55 55 55 55 55 55 55 55   |
| RYSTALLINA  BOCERA  BOCERA  MUS  RA LACUSTRIS  A  TICOIDA  EPODA  A  TICOIDA  TICOIDA  A  TICOIDA  A  TICOIDA  TICOIDA  A  TICOIDA   | MUS<br>MUS<br>MUS<br>MUS<br>MUS<br>MUS<br>MUS<br>MUS                                      | u t - ā u  | 2 à t o o      | 10 20<br>12 20<br>14 20 30 30 30 30 30 30 30 30 30 30 30 30 30                               |
| MUS  RA LACUSTRIS  RA LACUSTRIA  RA LACUSTRI | MUS TICOTOA EPODA A A A A A A A A A A A A A A A A A A                                     | t  | à t o o        | 65 25 55 55 55 55 55 55 55 55 55 55 55 55  |
| #US  | RA LACUSTRIS TICOIDA FPODA A A A A A A A A A A A A A A A A A A                            | £ - 6 6  | ā t o o        | <b>6</b> 523   |
| UNTO A LACUSTRIS  UNTA LACUSTRIS  UNTA LACUSTRIS  UNTO A LACUSTRIA  UNTO A LACUSTRIS  UNTO A LACUSTRIS | LCOIDA<br>LCOIDA<br>TCOIDA<br>PODA<br>S AZTECA  | t t 5 2  | <b>ā t</b> 0 0 | 92.33<br>  |
| URA LACUSTRIS  CTICOIDA  CTICOIDA  PEPODA  DA  DA  DA  DA  DA  DA  DA  DA  DA  | A LACUSTRIS ICOIDA PODA S A AZTECA  | ~ <del>6</del> 4   | t o o          | <b>9</b><br>23   |
| CTICOTOA  PEPODA  DA  DA  LLA AZTECA  PHIPODA  OMIDAE  S  ENITOAE  ENITOAE  OFFINA  ENITOAE  OFFINA  ENITOAE  OFFINA  OMIDAE   | ICOTOA<br>PODA<br>S<br>S<br>A AZTECA  | <b>ā</b> 4   | 0 0            | <b>623</b>   |
| DA  DA  DA  TUS  TUS  TUS  TUS  TUS  TUS  TUS  TU  | PODA  | 8  | 0              | 523  |
| DA  BA  RUS  RUS  LLA AZTECA  1 1 2  LLA AZTECA  PHIPODA  OMIDAE  ENIIDAE  ENIIDAE  OPA  OPA  OPA  OPA  OPA  OPA  OPA  O   | S<br>   | 8  | 0              | ;  |
| DA 17 21 19 LLA AZTECA 1 2 19 LLA AZTECA 1 2 1 2 PHIPODA  OMIDAE 27 128 95 1  S  | S<br>A AZTECA   |  |                | <b>4</b>   |
| LLA AZTECA 1 2 19 LLA AZTECA 1 2 2 19 PHIPODA OMIDAE 27 128 85 1 OPTERA AE S S S ENIA 0 0 2 8 ENIA 0 0 2 1   |   | ;  | 9              |  |
| LLA AZTECA  1 1 2  PHIPODA  DMIDAE  OPTERA  AE  S  S  RIDAE  ENITDAE  ENITOAE  O 2 8  C 2 8  C 2 8  C 2 8  C 3 8  C 4 2 8  C 5 8  C 6 2 8  C 7 128 95  T 128 | HYALELLA AZTECA   | 7  | <u>0</u>       |  |
| PHIPODA  OMIDAE  S  TIDAE  ENIIDAE  PHIPODA  27 128 95 1  27 128 95 1  0 0 2 8  0 0 2 8  0 0 2   |   | -  | 8              |  |
| OMIDAE  OPTERA  AE  S  S  RIDAE  ENIIDAE  O 2 8  O 2 8  O 2 8  O 2 1   |   |  |                | 420  |
| 0 0 0  | OMIDAE 27   | 128  | 60             | 1722   |
| DAE<br>11<br>11DAE<br>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | EPHEMEROPTERA   |  |                |  |
| 0 0  |   | ~  | •              |  |
| 0 0  |   |  |                |  |
| 0  |   | 0  | ~              |  |
|  |   | c  | •              |  |
|  |   | 7  | -              |  |

| TRANSECT 2 STATION 1 (CONT'D)  GRAB CDUMTS  ESTIMATED  GRAB CDUMTS  ESTIMATED  O 1 0 1 0  1 1 2 3 NO./50. NETE  DUBIRAPHIA  ALL COLEOPTERA  HYDROPSYCHIE  HYDROPSYCHE  HYDROPSYCH   | MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |              |          | 10/11/83      |
|--|---------------------------------------|------------|--------------|----------|---------------|
| 11 2 3 NO./SQ. PTERA A HIDAE PSYCHE COME COPODIDAE PS.IS COPTERA COPODA 1 13 1 1 0 0 2 COPODA 1 13 1 1 0 0 2 COPODA COPOD | 8                                     | ğ          | AB COU       | STA      | ESTIMATED     |
| MAE  PTERA  PTERA  O 1 0  1 0  PTERA  A 1 13 1  A 14 32  A 15 0  A 1 1 0 0  A 1 0 0  A  |                                       | - 1        | 2            |          | NO./SQ. METER |
| PTERA  HIDAE  HIDAE  PSYCHE  CHE  CHE  CHE  CHE  CHE  CHE  CHE   | _                                     |            |              |          |               |
| PTERA  A HIDAE  PSYCHE  CHE  CHE  COPODIDAE  PSIS  PSIS  OPODA  OPODODA  AE  1 0 0  26 132 81  1 0 2  OPODA  AE  1 2 0  AE  AE  1 2 0  | DUBIRAPHIA                            | 0          | -            | 0        |               |
| HIDAE PSYCHE CHE CHE CHE COMPODIDAE FSIS PSIS PSIS PSIS PSIS PSIS PSIS PSIS  | ALL COLEOPTERA                        |            |              |          | ۲             |
| CHE  | TRICHOPTERA                           |            |              |          |               |
| CHE  CHE  DAE  ES  PSIS  PSIS  POPODIDAE  OPODA  OP | CHEUNATOPSYCHE                        | 0          | 7            | 0        |               |
| DAE  ES  OPODIDAE  PSIS  OPODIDAE  APTERA  O 10 0  1 0 2  1 0 2  OPODA  AE  I 2 0  AE  I 2 0  AE  I 2 0  AE  I 3 14 32  AE  I 2 0  | HYDROPSYCHE                           | 0          | 6            | 8        |               |
| DPODIDAE 1 13 1 15 1 15 1 15 1 15 1 15 1 15 1 1  | LEPTOCERIDAE                          |            |              |          |               |
| OPODDIDAE  1 13 1 PSIS   DPTERA  OPODA  OPODA  1 2 0  AE  1 2 0  AE  OPODA      | MYSTACIDES                            | -          | 0            | 0        |               |
| PSIS COPTERA COPTERA COPTERA   | POLYCENTROPODIDAE                     |            |              |          |               |
| OPTERA OPODA OPODA 1 0 0 8 1 3 14 32 24 AE 1 2 0   | NEURECLIPSIS                          | <b>-</b>   | <del>.</del> | -        |               |
| 0 10 0<br>26 132 81<br>1 0 2<br>0 B 1<br>3 14 32<br>AE   | ALL TRICHOPTERA                       |            |              |          | 193           |
| 26 132 81<br>1 0 2<br>0 0 8 1<br>3 14 32<br>AE   | ACARINA                               | 0          | 9            | 0        | 69            |
| 26 132 81<br>1 0 2<br>0 0 8 1<br>3 14 32<br>AE   | GASTROPODA                            | ,          | ;            | ,        |               |
| 1 0 2<br>0 B 1<br>3 14 32<br>0P0DA<br>1 2 0  | AMNICOLA                              | <b>5</b> 0 | 132          | <b>~</b> |               |
| OPODA 3 14 32 3 14 32 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4  | FERISSIA                              | -          | 0            | 8        |               |
| 3 14 32<br>OPODA<br>AE 1 2 0   | GYBAULUS                              | 0          | 60           | -        |               |
| 3 14 32 OPODA 1 2 O  |                                       | •          | 1            |          |               |
| OPODA  AE  1 2 0   | PHYSA                                 | m          | 7            | 35       |               |
| 1 2 0  | ALL GASTROPODA                        |            |              |          | 2066          |
| 2 0  | PELECYPODA                            |            |              |          |               |
|  | SPHAERIOAE<br>PISIDIUM                | -          | 8            | 0        | 21            |
|  |                                       |            |              |          |               |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |     |            |      | 10/11/83      |
|---------------------------------------|-----|------------|------|---------------|
| ST. CLAIR RIVER TRANSECT 2 STATION 2  | æ   | 00         | STNU | ESTIMATED     |
| TAXON                                 | -   | 1 2 3      | 6    | NO./SO. METER |
| <b>V</b>                              | 236 | 236 1560   | 537  | 16067         |
| ALL CNIDARIA                          |     |            |      | 16067         |
| RHABDOCGELA                           | 13  | <b>36</b>  | 8    | 282           |
| NEBERTINEA                            | =   | 0          | ED.  | 110           |
| NEMATODA                              | 0   | -          | 10   | 4             |
| OLIGOCHAETA<br>SPIROSPERMA            | ē   | <b>5</b> 6 | 9    |               |
| OTHER<br>ALL OLIGOCHAETA              | •   | 5          | 35   | 1570          |
| CLADGCERA<br>DAPHNIA                  | -   | 4          | 4    | 62            |
| ALL CLADOCERA                         |     |            |      | 62            |
| COPEPODA<br>DIAPTOMUS                 | 0   | n          | 0    | 21            |
| ALL COPEPODA                          |     |            |      | 2             |
| AMPHI PODA<br>GAMMARUS                | v   | 5          | •    |               |
|                                       | 6   | -          | 0    |               |
|                                       |     |            |      | 138           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA               |      |       |                 | 10/11/63      |
|---|------|-------|-----------------|---------------|
| TRANSECT 2 STATION 2 (CONT'D)                       | Š    | į     | ļ               |               |
| TAXON   | CKAC | 1 2 3 | ი ო<br><b>Z</b> | NO./SQ. METER |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE<br>All DIPTERA | NO.  | 80    | 10 <del>-</del> | 103           |
| EPHEMEROPIERA<br>BAETISCIDAE<br>BAETISCA            | 0    | ٥     | -               | 2             |
| HEPTAGENIDAE<br>STENONEMA                           | 8    | -     | 0               |               |
| ALL EPHEMEROPTERA                                   |      |       |                 | 28            |
| BRACHYCENTRIDAE<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS |      | -     | •               |               |
| HYDROPSYCHIDAE<br>CHEUMA TOPSYCHE                   | 7    | 37    | •               |               |
| HYDROPSYCHE   | 7    | 32    | 6               |               |
| 0115  | -    | 59    | •               |               |
| POLYCENI KUPUO LUAE<br>NEURECLIPSIS                 | œ    | ~     | -               |               |
| ALL TRICHOPTERA                                     |      |       |                 | 985           |
| ACARIMA   | -    | e     | ~               | 4             |

| MACRUSCUBERINGS PUNAN GRAB COUNT DATA   |             |             |          | 10/11/83                                |
|---|-------------|-------------|----------|---|
| TRANSECT 2 STATION 2 (CONT'D)           |             |             |          |   |
| TAXON                                   | ₹<br>85     | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER              |
| GASTROPODA                              | 1 1 1 1 1 1 |             |          | · [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ |
| AMNICOLA                                | <b>5</b> 6  | 63          | 50       |   |
| 1 |             |             |          |   |
| ELIMIA LIVESCENS                        | 0           | =           | 11       |   |
|   |             |             |          |   |
| FERISSIA                                | 4           | ო           | 0        |   |
| 1 0 f 0 f 0 f 0 f 0 f 0 f 0 f 0 f 0 f 0 |             |             |          |   |
| GYRAULUS                                | -           | 0           | 0        |   |
|   |             |             |          |   |
| LYMNAEA                                 | ~           | 0           | -        |   |
| •                                       |             |             |          |   |
| PHYSA                                   | •           | 7           | 9        |   |
| 1 9 1 1                                 |             |             |          |   |
| VALVATA SINCERA                         | 0           | 0           | -        |   |
|   |             |             |          |   |
| ALL GASTROPODA                          |             |             |          | 1102                                    |
| PELECYPODA                              |             |             |          |   |
| SPHAERIIDAE                             |             |             |          |   |
| PISIDIUM                                | 7           | 11          | o        |   |
| , |             |             |          |   |
| SPHAERIUM                               | -           | 0           | 0        |   |
|   |             |             |          |   |
| ALL SPHAERIIDAE                         |             |             |          | 500                                     |
| ALL PELECYPODA                          |             |             |          | 200                                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |               |      | 10/11/83      |
|---------------------------------------|----------|---------------|------|---------------|
| ST. CLAIR RIVER TRANSECT 2 STATION 3  | Š        | GRAB COUNTS   | UNTS | ESTIMATED     |
| TAXON                                 | -        | 2             | 6    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 888      | 888 1499 1488 | 1488 | 26686         |
| ALL CNIDARIA                          |          |               |      | 26686         |
| RHABDOCOELA                           | <b>o</b> | ស             | 12   | 179           |
| NEMERTINEA ,                          | -        | 21            | -    | 158           |
| NEMATODA                              | 7        | ø             | -    | 62            |
| OLIGOCHAETA<br>Spirosperma            | -        | 0             | 0    |               |
| OTHER<br>ALL OLIGOCHAETA              | 4        | 0             | 0    | 96            |
| POLYCHAETA<br>Manayunkia speciosa     | 0        | 0             | -    |               |
| ALL POLYCHAETA                        |          |               |      | 7             |
| CLADOCERA<br>BOSMINA                  | 0        |               | 0    |               |
| CHYDORUS                              | 0        | -             | 0    |               |
| DAPHNIA                               | ın       | 4             | ō    |               |
| HOLOPEDIUM                            | 0        | -             | 0    |               |
| ALL CLADOCERA                         |          |               |      | 158           |

| MACKUZUUBENIHUS PUNAK GRAB COUNT DATA      |      |             | ō   | 10/11/83                   |
|--|------|-------------|-----|----------------------------|
| TRANSECT 2 STATION 3 (CONT'D)              | !    |             |     |                            |
| TAXON                                      | GRAB | GRAB COUNTS |     | ESTIMATED<br>NO./SQ. METER |
| -  | 0    | 0           | 3   |                            |
| t  | 0    | ស           | 0   |                            |
| DIAPTOMUS                                  | 4    | _           | o   |                            |
|  | 69   | •           | 0   |                            |
| HARPACTICOIDA                              | 0    | -           | 0   |                            |
| MESOCYCLOPS                                | 0    | -           | 0   |                            |
| ALL COPEPODA                               |      |             | 234 | 7                          |
| AMPHIPODA<br>Gammarus                      | ٥    | ٥           |     |                            |
| _  | -    | -           | 0   |                            |
| ALL AMPHIPODA                              |      |             | 8   | 21                         |
| DIPTERA<br>CHIRONOMIDAE                    | 6    | 4           | 9   | 62                         |
| EPHEMEROPTERA<br>Heptagenidae<br>Stenonema | 80   | -           | 80  |                            |
| ALL EPHEMEROPTERA                          |      |             | -   | _                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |     |             |      | 10/11/83      |
|---|-----|-------------|------|---------------|
| TRANSECT 2 STATION 3 (CONT'D)                   | GR. | GRAB COUNTS | STNU | ESTIMATED     |
| TAXON   | -   | 2           | 6    | NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | 0   | 0           | 7    |               |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE                | 24  | 23          | 52   |               |
| HYDROP SYCHE                                    | €   | 9           | 7    |               |
| LEPTOCERIDAE CERACLEA                           | 0   | 0           | -    |               |
| POLYCENTROPODIDAE<br>NEURECLIPSIS               | 0   | 0           | -    |               |
| RHYACOPHILIDAE<br>PROTOPTILA                    | 12  | 4           | 7    |               |
| ALL TRICHOPTERA                                 |     |             |      | 1012          |
| ACARINA   | 5   | 33          | ĸ    | 372           |
| GASTROPODA<br>Amnicola                          | -   | -           | 0    |               |
|   | 9   | 23          | Ξ    |               |
| LYMAEA  | -   | 0           | 0    |               |
| PHYSA   | ٥   | 6           | 8    |               |
| ALL GASTROPODA                                  |     |             |      | 647           |
| PELECYPODA<br>Sphaerioae<br>Sphaerium           | 0   | -           | 0    |               |
| ALL PELECYPODA                                  |     |             |      | 1             |

C

| ST. CLAIR RIVER TRANSECT 3 STATION 1 | į          | j           |          |                            |
|--------------------------------------|------------|-------------|----------|----------------------------|
|                                      | <b>2</b> ← | GRAB COUNTS | NTS<br>B | ESTIMATED<br>NO./SQ. METER |
| }<br> <br> -<br> -                   |            | ;<br>;<br>; |          | !<br>!<br>!<br>!<br>!<br>! |
| HYORA                                | 21         | 17          | 75       | 178                        |
| ALL CNIDARIA                         |            |             |          | 778                        |
| TRICLADIDA                           | 0          | 8           | 0        | <b>4</b>                   |
| NEMERTINEA                           | <b>6</b> 0 | -           | 0        | 124                        |
| OLIGOCHAETA<br>Spirosperma           | 0          | 0           | 8        |                            |
| OTHER<br>ALL OLIGOCHAETA             | 11         | 6           | =        | 220                        |
| POLYCHAETA MANAYUNKIA SPECIOSA       | 0          | -           | 0        | <b>,</b>                   |
| ALL POLICIARIA                       |            |             |          | •                          |
| CLADUCERA                            | 8          | -           | 0        |                            |
| AINHAE                               | -          | ო           | 4        |                            |
| ALL CLADOCERA                        |            |             |          | 111                        |
| COPEPODA<br>DIAPTOMUS                | ø          | 0           | -        |                            |
| EPISHURA LACUSTRIS                   | 0          | 4           | <b>-</b> | 89                         |
|                                      | -          | 0           | 0        |                            |
| ALL AMPHIPODA                        |            |             |          | ,                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA               |          |         |      | 10/11/83      | 83    |
|---|----------|---------|------|---------------|-------|
| TRANSECT 3 STATION 1 (CONT'D)                       | 9        | 0 trans | ų    | COTAMATER     | Ę     |
|   | -        | 2       | n m  | NO./SQ. METER | METER |
| TERRESTRIAL INSECT                                  | 0        | 0       | -    | 7             |       |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALL DIPTERA | r 0      | 4 4     | 0 22 | 248           |       |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE     | -        | 4       | 0    |               |       |
| HYDROPSYCHE   | <b>.</b> | 28      | ĸ    |               |       |
| LEPTOCERIDAE<br>CERACLEA<br>                        | а        | a       | •    | 413           |       |
| GASTROPODA  | 8        | 0       | 6    |               |       |
| ELIMIA LIVESCENS                                    | 0        | ~       | 0    |               |       |
| ALL GASTROPODA                                      |          |         |      | 48            |       |

| ST. CLAIR RIVER TRANSECT 3 STATION 2 |     | GRAB COUNTS  | STAD     | ESTIMATE      | e     |
|--------------------------------------|-----|--------------|----------|---------------|-------|
|                                      |     | 7            | 6        | NO./SQ. METER | HETER |
| CNIDARIA<br>Hydra                    | 552 | 926          | 352      | 12809         | !     |
| ALL CNIDARIA                         |     |              |          | 12809         |       |
| RHABDOCOELA                          |     | 4            | 8        | 10<br>10      |       |
| NEMERTINEA                           | î.  | 23           | 2        | 406           |       |
| NEMATODA                             | -   | ٥            | -        | 7             |       |
| OLIGOCHAETA                          | 2   | <del>6</del> | п        | 282           |       |
| SPE                                  | -   | 0            | 0        | 7             |       |
| ALL POLYCHAETA                       |     |              |          | 7             |       |
| CLADOCERA                            | c   | •            | •        |               |       |
| 42.1E000                             | •   | •            | ,        |               |       |
| DAPHNIA                              | 2   | 12           | <u>t</u> |               |       |
| HOTOPOTAL                            | 0   | 0            | -        |               |       |
|                                      |     |              |          |               |       |
| ALL CLADOCERA                        |     |              |          | 351           |       |

| TRANSECT 3 STATION 2 (CONT'D)  TRANSECT 3 STATION 2 (CONT'D)  TAXON  COPEDDOA  CYCLOPOIDIDAE  CYCLOPOIDIDAE  CYCLOPOIDIDAE  CYCLOPOIDIDAE  CYCLOPOIDIDAE  ALL AMPHIPODA  HYALELLA AZTECA  ALL AMPHIPODA  ALL COPTERA  ALL DIPTERA  CHIPACAGNIDAE  BARTIDAE  BARTICACOPTERA  ALL TRICHOPTERA  HYDROPSYCHIA BARTIDAE  HYDR |   |             |          |     |              |
|--|---|-------------|----------|-----|--------------|
| ### GODE   1   |   | GRAB        | 200      | NTS | ESTIMATED    |
| MUSS  MAUS   | TAXON                                   | -           | 2        | 9   | NO./SQ. METE |
| ## A ZYECA  ## A Z | COPEPOTA                                | <b>~</b>    | <b>-</b> | 0   |              |
| ## RADPTERA  ### RADPTERA  #### RADPTERA  #### RADPTERA  #### RADPTERA  #### RADPTERA  ###################################   |   |             |          |     |              |
| LUS  LUS  A LACUSTRIS  A LACUSTRIS  A AZTECA   | CYCLOPS BICUSPIDATUS                    | -           | 0        | 0   |              |
| A LACUSTRIS  A LACUSTRIS  FODA  A AZTECA  A AZTECA  A AZTECA  I PODA  I PODA  I TERA  TERA  TERA  TERA  TERA  TERA  TO 0  TO 0 | DIAPTOMUS                               | 8           | 0        | m   |              |
| A LACUSTRIS  A AZTECA  A AZTECA  A AZTECA  IPODA  E ERA  TERA  TERA  TERA  TERA  TO O  TIDAE  TERA  TO O  TIDAE  TO O  TO O | 1 0 3 1 3 1 3 2 0                       |             |          |     |              |
| ### AZTECA 2 0 0  ################################   | EPISHURA LACUSTRIS                      | 0           | 0        | -   |              |
| # AZTECA 2 0 0   1   1   1   1   1   1   1   1   1   | ALL COPEPODA                            |             |          |     | 62           |
| DWIDAE DAE PTERA OPTERA | AMPHI PODA                              | •           | o        | 0   | 7            |
| DMIDAE DMERA DMIDAE DAE PTERA OPTERA OPTERA AE ENITDAE HEMEROPTERA   | TARRET ARTERIA                          | ı           | •        |     | . ;          |
| DMIDAE DAE DAE DAE DAE DAE DAE DAE DAE DAE   | ALL AMPHIPODA                           |             |          |     | *            |
| FERA 1 1 5 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | DIPTERA                                 | ļ           | ,        | •   | 1            |
| FERA 1 1 5 9 1 1 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6   | CHIRONOMIDAE                            | <b>10</b> - | n C      | 00  | 89           |
| ERA PTERA 1 0 0 0 1 1 5 5 1 1 1 1 1 1 1 1 1 1 1 1  | EMPIDIONE<br>ALL DIPTERA                | •           | •        | •   | 76           |
| 1 0 0 0 1 5 1 5 1 0 0 0 1 5 1 5 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0  | EPHEMEROPTERA                           |             |          |     |              |
| DAE ROPTERA ROPTERA ROPTERA ROPTERA ROPTERA O 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0  | Baetidae<br>Baetis                      | -           | 0        | 0   |              |
| ROPTERA ROPTER |   |             |          |     |              |
| ROPTERA  | STENONEMA                               | -           | 0        | 0   |              |
| 10 be to the second of the sec | ALL EPHEMEROPTERA                       |             |          |     | <b>*</b>     |
| HIDAE<br>CHE<br>DAE<br>DAE<br>OPTERA<br>DES<br>OPTERA  | TRICHOPTERA                             |             |          |     |              |
| DAE 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0  | HYDROPSYCHIDAE                          | 9           | -        | ĸ   | •            |
| DAE  ES  1 0 0  OPTERA  DES  0 1  PPERA  | 111111111111111111111111111111111111111 |             |          |     |              |
| DES 0 0 1  | LEPTOCERIDAE                            | (           | •        | c   |              |
| 0PTERA  0PTERA  0PTERA  0 0 1  0 0 1  PTERA  | CERACLEA                                | >           | •        | >   |              |
| OPTERA DES 0 0 1   | MYSTACIDES                              | -           | 0        | 0   |              |
| DES<br><br>PTERA   | ALL TRICHOPTERA                         |             |          |     | 117          |
| DES O  |   |             |          |     |              |
| ALL PLECOPTERA   | PLECOPTERA                              | 0           | 0        | -   | 7            |
| ALL PLECOPTERA 7   |   |             |          |     | •            |
|  | ALL PLECOPTERA                          |             |          |     | 1            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |      |   |          | 10/11/83                              | 6                  |
|---|------|---|----------|---------------------------------------|--------------------|
| TRANSECT 3 STATION 2 (CONT'D)           |      |   |          |                                       |                    |
| TAXON                                   | GRAE |   | NTS<br>O | ESTIMATEO<br>NO./SQ. METER            | O<br>ETER          |
|   | 0    | 0 | 0 1      | ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; | <i>i</i><br>!<br>! |
| GASTROPODA<br>AMNICOLA                  | c    | • | c        |                                       |                    |
|   | •    | , | •        |                                       |                    |
| ELIMIA LIVESCENS                        | 12   | 9 | 23       |                                       |                    |
| LYMAEA                                  | ເດ   | 0 | 0        |                                       |                    |
| ARYMA                                   | 0    | 0 | -        |                                       |                    |
| ALL GASTROPODA                          |      |   |          | 413                                   |                    |
| PELECYPODA                              |      |   |          |                                       |                    |
| SPHAERIIDAE<br>PISIDIUM                 | m    | - | 0        |                                       |                    |
| SPHAERIUM                               | -    | 7 | 0        |                                       |                    |
| * |      |   |          |                                       |                    |
| ALL SPHAERIIDAE<br>ALL PELECYPODA       |      |   |          | 8 <b>4</b><br>8 8                     |                    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA             |    |             |          | 10/11/83      |
|---|----|-------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 3 STATION 3              | 3  | GRAB COUNTS | UNITS    | ESTIMATED     |
| TAXON   | -  | ~           | 6        | NO./SQ. METER |
| BAIRDII   | ٥  | -           | ٥        |               |
| ALL FISH  |    | •           |          |               |
| CNIDARIA<br>HYDRA                                 | 0  | 0 1555      | 7        | 10757         |
| ALL CNIDARIA                                      |    |             |          | 10757         |
| RHABDOCOELA                                       | 0  | 4           | 0        | 647           |
| NEMERTINEA  | 0  | 28          | n        | 213           |
| NEMATODA  | 8  | -           | <u>.</u> | 1556          |
| DLIODCHAETA<br>Stylaria                           | 0  | n           | 0        |               |
| OTHER<br>ALL OLIGOCHAETA                          | 22 | 3           | 4        | 068           |
| MANAYLMKIA SPECIOSA ALL POLYCHAETA ALL POLYCHAETA | 0  | •           | -        | r r           |
| CLADOCERA<br>BOSMINA                              | •  | 8           | •        |               |
| DAPHELLA  | 0  | 67          | 80       |               |
| LEPTODORA KINDTII                                 | •  | -           | •        |               |
| ALL CLADOCERA                                     |    |             |          | A. R.         |

| TRANSECT 3 STATION 3 (CONT'D) TAXON COPEPODA |    |             |       |               |
|--|----|-------------|-------|---------------|
| 1  | as | SPAR COUNTS | A TAI | COTIMATED     |
|  |    | ,<br>,      | 96    | NO./SQ. METER |
| CYCLOPOTOTOAF                                | •  |             | •     | #<br>         |
|  | >  | >           | -     |               |
| _  | 0  | 4           | 0     |               |
|  |    |             |       |               |
| OIAPTOMUS                                    | 0  | -           | -     |               |
| EPISHURA LACUSTRIS                           | •  | 5           | 0     |               |
|  | •  | •           | •     |               |
| ALL COPEPODA                                 |    |             |       | 152           |
| AMPHIPODA                                    |    |             |       |               |
| GAMMARUS                                     | -  | -           | õ     |               |
|  |    |             |       |               |
| HYALELLA AZTECA                              | 0  | 0           | 7     |               |
| ۵  |    |             |       | 131           |
| ISOPODA                                      |    |             |       |               |
| LIRCEUS                                      | 0  | 0           | ~     | 4             |
| ALL ISOPODA                                  |    |             |       | 4.            |
|  |    |             |       |               |
| CHIRONDMIDAE                                 | 0  | Ξ           | 8     | 06            |
| EPHEMEROPTERA                                |    |             |       |               |
| FEXAGENIA TEXAGENIA                          | -  | 0           | ო     |               |
|  |    |             |       |               |
| BAETIDAE                                     | •  | •           | •     |               |
| 111111                                       | -  | 0           | >     |               |
| HEPTAGENI IDAE                               |    |             |       |               |
| STENDNEMA                                    | -  | -           | ED.   |               |
|  |    |             |       | •             |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA  |     |               |            | 10/11/83      |
|--|-----|---------------|------------|---------------|
| TRANSECT 3 STATION 3 (CONT'D)  | ê   | STAMPLY RANGE | MIC        | FCTIMATED     |
| TAXON  | 5 - | \$<br>8       |            | NO./SO. METER |
| TRICHOPTERA<br>HYNDODEYCHINAE  |     |               |            |               |
| CHEUMATOPSYCHE   | 0   | 2             | 10         |               |
| TO A SOCIAL TO A S | -   | 76            | 7          |               |
|  | •   | *             | !          |               |
| HYDROPTILIDAE  | 0   | 0             | -          |               |
| LEPTOCERIOAE<br>CERACLEA   | a   | -             | 0          |               |
|  | •   |               | )          |               |
| OECETIS  | 0   | -             | 0          |               |
| RHYACOPHILIDAE   |     |               |            |               |
| PROTOPTILA   | -   | 0             | 0          |               |
| ALL TRICHOPTERA  |     |               |            | 427           |
| ACARINA  | •   | 8             | 0          | 7             |
| GASTROPODA   |     |               |            |               |
| ELIMIA LIVESCENS   | õ   | 147           | 21         |               |
| GYRAULUS   | 0   | •             | 0          |               |
|  | •   | ď             | •          |               |
| * I THE  | •   | •             | >          |               |
| ALL GASTROPODA   |     |               |            | 1336          |
| PELECYPODA   |     |               |            |               |
| SPHAERIJDAE  | •   | 9             | •          |               |
|  | 0   | 2             | 77         |               |
| SPHAERIUM  | 5   | 9             | <b>6</b> 0 | •             |
|  |     |               |            | -             |
| ALL SPHAERIIDAE<br>All Pelecypoda  |     |               |            | 337           |
|  |     |               |            |               |

| MACROLOGENINGS FORMS GRAD COON! DAIA    |     |          |              | 10/12/83                   |
|---|-----|----------|--------------|----------------------------|
| ST. CLAIR RIVER TRANSECT 4 STATION 1    | ć   | 9        |              |                            |
| TAXON                                   | ž - | 1 2 3    | 2<br>2       | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                       | 197 | 391      | ٥            | 4049                       |
| ALL CNIDARIA                            |     |          |              | 4049                       |
| RHABDOCOELA                             | 45  | -        | ო            | 388                        |
| TRICLADIDA                              | 0   | 45       | 0            | 310                        |
| NEMERTINEA                              | 11  | n        | <del>-</del> | 234                        |
| NEMATODA                                | 24  | Ø        | 06           | 847                        |
| HIRUDINEA<br>HIRUDINEA<br>ERPOBDELLIDAE | 0-  | 0 70     | -0           |                            |
| HELOBDELLA ELONGATA                     | 0   | 0        | 8            |                            |
| ALL HIRUDINEA                           |     |          |              | 4                          |
| OLIGOCHAETA                             |     |          |              |                            |
| NAIS                                    | ~   | រភ       | 0            |                            |
| SPIROSPERMA                             | 34  | <b>5</b> | ~            |                            |
| STYLARIA                                | 6   | 30       | o            |                            |
| OTHER<br>A11 DIRECTA                    | 67  | 29       | 144          | Q                          |
| ALL OLIGOCIALIA                         |     |          |              | 207                        |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA  |      |             |         | 10/12/83   |
|--|------|-------------|---------|--|
| TRANSECT 4 STATION 1 (CONT'D)  | GRAE | GRAB COUNTS | 75<br>3 | ESTIMATED ND./SQ. METER                                  |
|  |      |             |         | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| CLADOCERA  | •    | 0           | 0       |  |
|  | 49   | ~           | 0       |  |
|  | o    | 0           | -       |  |
| SIDA CRYSTALLINA   | •    | •           |         | 6  |
| ALL CLADOCERA  |      |             |         | 3  |
| COPEPODA   | n    | 0           | 0       |  |
| DIAPTONOS  |      |             |         |  |
| MACROCYCLOPS   | 0    | 0           | -       |  |
| ALL COPERCIA   |      |             |         | 21   |
| DSTRACODA  | -    | 0           | 0       | 1  |
| AMPHIPODA<br>CAMBARUS  | 546  | 465         | φ       |  |
|  | Ç    | 1           | 0       |  |
| TOTAL AND SECTION OF THE PROPERTY OF THE PROPE | 0    | •           | 0       |  |
| ALL AMPHIPODA  |      |             |         | 7369   |
| ISOPODA  | 0    | 0           | -       | •  |
| Applica  |      |             |         |  |
| ALL ISOTOM<br>TERRESTRIAL INSECT   | 0    | 0           | ~       |  |
| DIPTERA  | 101  | 132         | 9       | 1983   |
|  |      |             |         |  |

| 4 STATION 1 (CONT'D)  GRAB COUNTS ESTIMATE  A  | A STATION 1 (CONT'D)  GRAB COUNTS ESTIMA  TA  A  HIDAE  PSYCHE  PSYCHE  DAE  CONTA  A  HIDAE  PSYCHE  BY A ACUTA  CONTA  A ACUTA  CONTA  BY ACUTA  CONTA  BY ACUTA  CONTA  |   |   |              |           | 50/17/01                                |
|--|--|---|---|--------------|-----------|---|
| THE SCENS  THE A ACUTA  THE A ACUTA  THE A ACUTA  THE A CUTA  THE  | THE A ACUTA  THE A ACUTA  THE A CUTA  THE  | STATION 1                                 |   |              |           | i                                       |
| FRA  A  EROPTERA  A  HIDAE  HI | FRA  A  BEROPTERA  A HIDAE  PSYCHE  CHE  DAE  CHE  DAE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  C   | TAXON                                     | Z                                       | <b>AB</b> CQ | STAD<br>8 | ESTIMATED<br>NO./SQ. METER              |
| A ERIDAE  A TRICARINATA  A TRICARINAE  A A CUTA  A A A CUTA  A A A CUTA  A A A A A A A A A A A A A A A A A A   | MEROPTERA  MEROPTERA  HIDAE  H | PHENEROPTERA                              | 1 |              |           | 1 |
| DAE  YCHE  Y | AFE AFERDATERA HIDAE HID | CAENIDAE                                  |   |              |           |   |
| A EROPTERA  A HIDAE  HIDAE  HIDAE  PSYCHE  TO 1  CHE  DAE  OD 1  O 1  O 1  O 1  O 1  O 1  O 1  O   | A ERIDAE  A HIDAE  A HIDAE  A HIDAE  A HIDAE  A HIDAE  B HIDAE  A  | CAENIS                                    | 0                                       | -            | 7         |   |
| A BEROPTERA  HIDAE | MEROPTERA  MATHERA  HIDAE  HID |   |   |              |           |   |
| ROPTERA   C  | ## O 2 6 ## O 333 269 6 ## O 0 6 ## O 0 6 ## O 0 0 6 ## O 0 0 6 ## O 0 0 1 ## O 0 0  | EPHEMERIDAE                               | ,                                       |              |           |   |
| NESCENS  | MATIDAE  MATIDAE  PSYCHE  CHE  DAE  DAE  DAE  DAE  DAE  DAE  DOPODA  TRICARINATA  T |   | 0                                       | 7            | 9         |   |
| HIDAE  | HIDAE  | ALL EPHEMEROPIERA                         |   |              |           | 76                                      |
| HIDAE HIDAE HIDAE HIDAE HIDAE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  C  | HIDAE  | BICHOPTERA                                |   |              |           |   |
| PSYCHE  CHE  CHE  DAE  DAE  DAE  O 1 0  1 0  1 0  1 0  1 0  1 0  DPTERA  RA ACUTA  TRICARINATA  TRICARINATA  AE  1 0 0  B8  1 0  M  OPODA  10  10  10  10  10  10  10  10  10  1   | PSYCHE  TO 1  CHE  DAE  DAE  DAE  DAE  O 1 0  1 0  1 0  1 0  1 0  1 0  1 0  1  | HYDROPSYCHIDAE                            |   |              |           |   |
| CHE DAE  DAE  DAE  O 1 0  1 0  1 0  1 0  1 0  DPTERA  SACUTA  RA ACUTA  TRICARINATA  TRICARINATA  AE  1 0 0  B8  10  10  10  10  10  10  10  10  10  1   | CHE DAE  DAE  DAE  O 1 0  1 0  1 0  1 0  1 0  DPTERA  STATE SERICAL  STATE STATE  ODPODA  M  ODPODA  O | CHEUMATOPSYCHE                            | -                                       | 0            | -         |   |
| CHE DAE  DAE  O 1 0  1 0  1 0  1 0  DAE  IVESCENS  RA ACUTA  TRICARINATA  TRICARINATA  AE  119 38 1  AM  OPODA  OPODA  OPODA  OF O 1  OPODA  O | CHE DAE  DAE  O 1 0  10 1 0  DAE  DAE  IVESCENS  RA ACUTA  RA ACUTA  TRICARINATA  O 0 6  OPODA  AE  THE CATABAE  O 0 1  O 0 0  OPODA  TRICARIDAE  O 0 1  O 0 0  OPODA  OPODA  O 0 0 1  O 0 0 0 1  O 0 0 0 1  O 0 0 0 0 1  O 0 0 0 0 0 0  O 0 0 0 0 0  O 0 0 0 0   |   |   |              |           |   |
| DAE  DOPTERA  1VESCENS  1V | DAE  DOPTERA  IVESCENS  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  129 38 1  100 0  119 38 1  100 0  100 1  | HYDROPSYCHE                               | ~                                       | 9            | 0         |   |
| DAE  DDFTERA  SDPTERA  SDPTERA | DAE  DAE  DAFERA  SDPTERA  333 269 6  IVESCENS  128 69 1  128 69 1  32 35 3  TRICARINATA  TRICAR | 111111111                                 |   |              | ,         |   |
| 1VESCENS  1VESCENS  1VESCENS  1VESCENS  1VESCENS  1VESCENS  1128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 09 1  128 100 0  100 00 0  100 00 1  100 00 1  100 00 1  100 00 1   | 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | LEPTOCERIDAE                              |   |              |           |   |
| AE TION TO THE STATE TO THE STA | AE RIIDAE   10   10   10   10   10   10   10   1   | OECETIS                                   | 0                                       | -            | 0         |   |
| 333 269 6  IVESCENS  128 69 1  32 35 3  RA ACUTA  TRICARINATA  220 103 0  00000A  1 0 0 88   | 333 269 6  IVESCENS  A0 43 0  128 69 1  32 35 3  RA ACUTA  ODODA  OPODA  M  OPODA  OPO | ****                                      | )                                       |              | ,         |   |
| 333 269 6  1VESCENS 40 43 0  128 69 1 32 35 3  RA ACUTA 0 0 6  | 333 269 6  IVESCENS 40 43 0  128 69 1 32 35 3  RA ACUTA 0 0 6  TRICARINATA 1 0 0 0PODA  M  ERIIDAE   | ALL TRICHOPTERA                           |   |              |           | 76                                      |
| 1VESCENS 40 43 0 1 1 28 69 1 1 28 69 1 1 28 69 1 1 28 69 1 1 28 69 1 1 28 69 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 1VESCENS  1VESCENS  10 269 6  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 38 1  M  ERIIDAE   | ASTROPODA                                 |   |              |           |   |
| TRICARINATA  TRICARINATA  AE  118 38 1  M  OPODA  TO SERVIDAE  1 0 0 1  1 0 0 1  | TRICARINATA  AE  10  | AMNICOLA                                  | 333                                     | 269          | 9         |   |
| TVESCENS 40 43 0  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  128 69 1  149 35 3  150 0  160  | TVESCENS 40 43 0  128 69 1 | 1   |   |              |           |   |
| 128 69 1  RA ACUTA 0 0 6  TRICARINATA 1 0 0  OPODA AE 119 38 1   | RA ACUTA 0 0 6 TRICARINATA 220 103 0 OPODA 119 38 1 W 0 0 1 W 0 0 1  | ELIMIA LIVESCENS                          | 9                                       | 43           | 0         |   |
| RA ACUTA 0 0 6 TELCARINATA 220 103 0 OPODA 119 38 1  | RA ACUTA 0 0 6   |   | 9                                       | 6            | •         |   |
| AE ACUTA 0 0 6 TRICARINATA 220 103 0 OPODA 119 38 1  | AE ACUTA 0 0 6 TRICARINATA 220 103 0 OPODA 119 38 1 ERIDAE 0 0 1   |   | 9                                       | Ď            | -         |   |
| TRICARINATA 220 103 0 F TRICARINATA 220 103 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | RA ACUTA  TRICARINATA  TRICARINATA  1 0 0  OPODA  AE  119 38 1  M  CRIDAE  | PHYSA                                     | 32                                      | 35           | 6         | ٠                                       |
| AE 119 38 1  | AE 119 38 1  ERIDAE 0 0 6  |   |   |              |           |   |
| TRICARINATA 220 103 0  OPODA  AE  119 38 1  M  0 0 1   | TRICARINATA 220 103 0  OPODA  AE  119 38 1  M  ERIDAE  | PLEUROCERA ACUTA                          | 0                                       | 0            | ø         |   |
| 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | VALVATA TRICARINATA                       | 220                                     | 103          | c         |   |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |   |   | }            | •         | -                                       |
| OPODA  AE  119 38 1  M  O O 1  ERIIDAE   | OPODA  AE  119 38 1  M  CRIDAE   | OTHER                                     | -                                       | 0            | 0         |   |
| AE 119 38 1  | AE 119 38 1<br>M 0 0 1<br>ERIDAE   | ALL GASTROPODA                            |   |              |           | 8877                                    |
| 119 38 1<br>0 0 1  | 119 38 1<br>0 0 1<br>AE  | ELECYPODA                                 |   |              |           |   |
| 119 38 1 0 0 1 SPHAERIDAE  | 119 38 1<br>0 0 1<br>AE  | SPHAERIIDAE                               |   |              |           |   |
| ERIUM O 0 1  | 0 0 1<br>AE  | PISIDIUM                                  | 119                                     | 38           | -         |   |
| SPHAERIZDAE  | 0 0 1<br>AE  | 1 5 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | •                                       | ,            |           |   |
| SPHAERIIDAE  | A.E.   | SPIARRICE                                 | 0                                       | 0            | -         |   |
|  |  | ALL SPHAFRIDAE                            |   |              |           | 1005                                    |

| MACROZOOBENTHOS PI                | MACROZDOBENTHOS PONAR GRAB COUNT DATA |             |     |          | 10/12/83                   |
|-----------------------------------|---------------------------------------|-------------|-----|----------|----------------------------|
| ST. CLAIR RIVER<br>TAXON          | TRANSECT 4 STATION 2                  | GRAB COUNTS | 20° | 35       | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA                          | #                                     | 1 10<br>1   | •   | 83       | 108                        |
| ALL CNIDARIA                      |                                       |             |     |          | 404                        |
| RHABDOCOELA                       |                                       | ٥           | -   | -        | :                          |
| NEMERTINEA                        | •                                     | ю           | -   | ~        | 7                          |
| NEMATODA                          |                                       | č.          | ~   | ~        | 117                        |
| DL JODCHAETA<br>NA 15             |                                       | 0           | ٥   | ~        |                            |
| STYLARIA                          |                                       | 0           | -   | 0        |                            |
| OTHER<br>ALL OLIGOCHAETA          |                                       | •           | 2   | £        | 2.00                       |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA | CIOSA                                 | -           | 0   | -        | <b>p</b>                   |
| ETA                               |                                       |             |     |          | 10<br>10                   |
| CLADOCERA<br>BOSMINA              |                                       | +           | 0   | -        |                            |
| DAPHNIA                           |                                       | n           | •   | <b>a</b> |                            |
| HOLDPEDIUM                        |                                       | •           | 0   | -        | 24                         |
| COPEPODA<br>EPISHURA LACUSTRIS    | SIZ                                   | 0           | 6   | •        | ñ ñ                        |
| ALL COTSTOON                      |                                       |             |     |          |                            |

| 0.000                      |                            |
|----------------------------|----------------------------|
| 200                        | ESTIMATED<br>NO./SO. METER |
| 1<br>1<br>1<br>1<br>1<br>2 | 110                        |
|                            | ÷                          |
| 9                          | 124                        |
| ٣                          |                            |
| 30                         |                            |
|                            | 158                        |
| 7                          | 4.                         |
| õ                          |                            |
| 4                          |                            |
| ٥                          |                            |
| 0                          |                            |
| ო                          |                            |
| 8                          |                            |
|                            | 289                        |
| ဖ                          | 76                         |
|                            | 76                         |
|                            | e a 6                      |

| ST. CLAIR RIVER TRANSECT 4 STATION 3 |      |             |             |                            |       |
|--------------------------------------|------|-------------|-------------|----------------------------|-------|
|                                      | GRAB | ر<br>ا<br>ا | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER | ETE E |
| CNIDARIA<br>HYDRA                    | 2    | 67          | 61          | 1026                       |       |
| ALL CNIDARIA                         |      |             |             | 1026                       |       |
| NEMERTINEA                           | -    | 0           | æ           | 62                         |       |
| NEMATODA                             | IO.  | 4           | 30          | 269                        |       |
| OLIGOCHAETA<br>Spirosperma           | 0    | 0           | -           |                            |       |
| OTHER<br>ALL OLIGOCHAETA             | 25   | £           | 2           | 413                        |       |
| POLYCHAETA MANAYUMKIA SPECIOSA       | -    | 0           | 0           | r r                        |       |
| CLADOCERA<br>BOSMINA                 | 0    | -           | •           |                            |       |
| PINAME                               | 6    | 4           | <b>6</b>    | 96                         |       |
| ALL CLADOCERA                        |      |             |             | 2                          |       |
| COFFECURA                            | ō    | -           | 0           |                            |       |
| EPISHURA LACUSTRIS                   | -    | 0           | •           | <b>7</b>                   |       |
| AMPHIPODA<br>GAMMARUS                | 10   | 10          | 0           |                            |       |
| HYALELLA AZTECA                      | 0    | 0           | -           |                            |       |
| ALL AMPHIPODA                        |      |             |             | 136                        |       |

| TRANSECT 4 STATION 3 (CONT'D)             |           | ;           | ,   |  |
|---|-----------|-------------|-----|--|
| TAXON                                     | GRAB<br>1 | GRAB COUNTS | 3 6 | ESTIMATED<br>NO./SQ. METER   |
| DIPTERA<br>CHIRONOMIDAE                   | 0         | 6           | LC. | 2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| TRICHOPTERA HYDROPSYCHIDAE CHEUMATOPSYCHE | c         | c           | •   |  |
| HYDROPSYCHE                               | . 0       | 0           | =   |  |
| ALL TRICHOPTERA                           |           |             |     | 83   |
| ACARINA                                   | 0         | -           | 0   | ۲  |
| GASTROPODA                                | c         | c           | 4   |  |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1     | >         | >           | r   |  |
| ELIMIA LIVESCENS                          | 4         | 4           | 9   |  |
| GYRAULUS                                  | 0         | 0           | -   |  |
| PHYSA                                     | 0         | 0           | 8   |  |
| ALL GASTROPODA                            |           |             |     | 145  |
| PELECYPODA                                |           |             |     |  |
| SPHAERIDAE<br>PISIDIUM                    | -         | -           | -   | 21   |
| ALL PELECYPODA                            |           |             |     |  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |             |              | 10/12/83      |
|---------------------------------------|----------|-------------|--------------|---------------|
| ST. CLAIR RIVER TRANSECT 5 STATION 1  | 85       | GRAB COUNTS | STNU         | ESTIMATED     |
| TAXON                                 | -        | 7           | 6            | NO./SO. METER |
| CNIDARIA<br>HYDRA                     | 10<br>20 | 6           | 158          | 2775          |
| ALL CNIDARIA                          |          |             |              | 2775          |
| RHABDOCOELA                           | <b>.</b> | 57          | 23           | 675           |
| TRICLADIDA                            | ۲        | 0           | 0            | 8             |
| NEMERTINEA                            | ۴        | <b>=</b>    | Ø            | 234           |
| NEMATODA                              | -        | 4           | 1            | 337           |
| ERPOBDELLIDAE<br>ERPOBDELLA PUNCTATA  | -        | 0           | -            | <b>*</b>      |
| ALL MIKOLINEA                         |          |             |              | :             |
| DL IGOCHAETA<br>NAIS                  | 10       | 0           | 0            |               |
| SPIROSPERMA                           | 5        | 98          | 21           |               |
| STYLARIA                              | 6        | 164         | <del>.</del> |               |
| OTHER                                 | 133      | 153         | 506          |               |
| ALL OLIGOCHAETA                       |          |             |              | 5764          |

| GRAB COUNTS  1 2 3  1 2 3  1 4 2 3  1 5 STATION 1 (CONT'D))  GRAB COUNTS  1 6 27 42  1 7 0 0  RYPTUS  ADOCERA  A LACUSTRIS  DA  DA  BA  CYCLOPS  PEPODA  DA  HIPODA  PHIPODA  1 6 27 42  1 0 0  1 0  1 0  1 0  1 0  1 0  1 0  1 0  | MACHULUBENINUS PUNAK GRAB COUNI DATA |   |              |           | 10/12/83                                |
|--|--------------------------------------|---|--------------|-----------|---|
| RA IA AZTECA IS POGONIDAE OWIDAE OWITS  1 2 3 3 1 4 2 3 3 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4  | TRANSECT 5 STATION 1 (CONT'D)        |   |              | !         |   |
| TAA  TAA  TAA  TAA  TAA  TO 0  TYPTUS  ADGONIDAE  TO 1  TO 0  TO 0 |                                      | <b>&amp;</b> –                          | <b>AB</b> 48 | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER              |
| A  | }<br>                                | 1 | }            |           | 1 |
| RYPTUS  RYPTUS  ADGCERA  A MA  A LACUSTRIS  O 1 0  1 1 0  CYCLOPS  CYCLOPS  THOODA  BA  A 1 96 61  BA  BA  BA  BA  BA  BA  BA  A 1 96 61  BA  BA  BA  BA  BA  BA  BA  BA  BA  B  | DAPINIA                              | 16                                      | 27           | 42        |   |
| A LACUSTRIS  A LACUSTRIS  O 1 0  URA LACUSTRIS  O 7 0  O 1 0  URA LACUSTRIS  O 1 0  O 0 0 0  O 0 0   | HOLOPEDIUM                           | ~                                       | 0            | 0         |   |
| CLOPS  |                                      | ,                                       |              |           |   |
| ADOCERA  A LACUSTRIS  O 1 0  URA LACUSTRIS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  THEODA  A 1 96 61  DA  A 2 95  CYCLOPS  THOODA  A 3 95  THOODA  THOOD | IL JUCKA PIUS                        | 0                                       | ∞            | 0         |   |
| URA LACUSTRIS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 1   | ALL CLADOCERA                        |   |              |           | 647                                     |
| URA LACUSTRIS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 1  | COPEPODA                             |   |              |           |   |
| CYCLOPS  1 1 0  PEPODA  DA  A1 96 61  DA  RUS  RUS  LLA AZTECA  15 2 3  PHIPODA  POGONIDAE  16 190 141  DAE  10 0  | EPISHURA LACUSTRIS                   | 0                                       | -            | 0         |   |
| DA   | MACROCYCLOPS                         | -                                       | -            | 0         |   |
| DA   | ALL COPEPODA                         |   |              |           | 21                                      |
| DA<br>FUS<br>LLA AZTECA<br>HIPODA<br>POGONIDAE<br>OMIDAE<br>10 0   | OSTRACODA                            | 4                                       | 96           | 19        | 1364                                    |
| RUS  | AMPHI PODA                           |   |              |           |   |
| LLA AZTECA 15 2 3  PHIPODA POGONIDAE 0 2 0  MIDAE 10 0   | GAMMARUS                             | 69                                      | 39           | 92        |   |
| PHIPODA POGONIDAE 0 2 0 OMIDAE 146 190 141 DAE   | HVALELLA AZTECA                      | 5                                       | a            | ღ         |   |
| POGONIDAE 0 2 0 OMIDAE 146 190 141 DAE 1 0 0   | ALL AMPHIPODA                        |   |              |           | 1536                                    |
| 146 190 141  | DIPTERA                              | •                                       | •            | •         |   |
| 0 0 -  | CHIRONOMIDAE                         |   | 190          | <u>‡</u>  | 3285                                    |
|  | EMPIDIDAE<br>All Didteda             | -                                       | 0            | 0         | 9000                                    |

| GRAB COUNTS  A   | TRANSECT 5 STATION 1 (CONT'D)                            | _                                     |                  |     |          |                            |
|--|--|---------------------------------------|------------------|-----|----------|----------------------------|
| DAE  ODAE  O |  |                                       | GRAB<br>1        | 20G | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| FE 58 59 25  DAE  RIDAE  THUS  | !  | * * * * * * * * * * * * * * * * * * * | •<br>•<br>•<br>• |     |          |                            |
| FROPTERA ROPTERA ROPTE | CAENIDAE<br>CAENIS                                       |                                       | 11               | =   | ~        |                            |
| FE 58 59 25  DAE  RIDAE  TRUS  | ) † ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !                  |                                       |                  |     |          |                            |
| DAE  ROPTERA  RIDAE  RIDAE  HE  HE  S  S  S  S  S  S  S  S  S  S  S  S  S  | EPHEMERIDAE  |                                       |                  |     |          |                            |
| FIDAE  RIDAE  THUS  THUS | HEXAGENIA  |                                       | 80               | 28  | 28       |                            |
| PADE TRUS  S S S S S S S S S S S S S S S S S S   | SAETIDAE   |                                       |                  |     |          |                            |
| ######################################   | BAETIS   | •                                     | -                | 0   | 0        |                            |
| RIDAE TRUS TRUS TRUS TRUS TRUS TRUS TRUS TRUS  | \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ |                                       |                  |     |          |                            |
| RIDAE<br>TRUS<br>TRUS<br>TRUS<br>TRUS<br>TRUS<br>TRUS<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S<br>S  | HEPTAGENI IDAE   |                                       | •                | ,   |          |                            |
| ROPTERA  1 1 0  RIDAE TRUS   | STENONERA  |                                       | -                | 4   |          |                            |
| AE  S  S  S  S  S  S  S  S  S  S  S  S  S  | ALL EPHEMEROPTERA  |                                       |                  |     |          | 1308                       |
| FIDAE TRUS TRUS TRUS TRUS TRUS TRUS TRUS TO 1 0 1 0 2 1 0 3 2 1 37 5 5 6 1 37 5 6 1 0 5 7 0 7 0 1 0 7  | LEPIDOPTERA  |                                       | -                | -   | 0        | 7                          |
| RIDAE TRUS TRUS TRUS TRUS TRUS TRUS TRUS TRUS  | TRICHOPTERA  |                                       |                  |     |          |                            |
| VCENTRUS  VCENTRUS  SYCHIDAE  PSYCHE  PSYCH  PSY | BRACHYCENTRIDAE  |                                       |                  |     |          |                            |
| SYCHIDAE SYCHIDAE ERIDAE LEA LEA LEA LEA LEA LEA LEA LEA LEA L   | BRACHYCENTRUS  |                                       | a                | -   | 0        |                            |
| SYCHIDAE  PSYCHE  PSYCHE  ERIDAE  LEA  CIDES  CIDES | !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!                  |                                       |                  |     |          |                            |
| PSYCHE  ERIDAE  LEA  LEA  CIDES  CIDE | HYDROPSYCHIDAE   |                                       |                  |     |          |                            |
| ERIDAE LEA LEA LEA CIDES | HYDROPSYCHE  |                                       | 0                | -   | 0        |                            |
| ENIDAE  LEA  LEA  CIDES  CIDES |  |                                       |                  |     |          |                            |
| CIDES  CI | LEPTOCERIDAE   |                                       | •                | ,   | •        |                            |
| CIDES  CIDES  CIDES  1 S  1 S  1 S  1 S  1 S  1 C  1 CHOPTERA  DAE  1 CHOPTERA  1 CHOPTERA | CERACLEA   |                                       | >                | -   | >        |                            |
| 115<br>115<br>115<br>117<br>117<br>117<br>117<br>117   | MYSTACIDES   |                                       | (7)              | 0   | m        |                            |
| 15 ES O 11 37 ES NODES NODES NODES O 1 0   |  |                                       | )                | ,   | 1        |                            |
| ES 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0   | OECET15  |                                       | 9                | =   | 37       |                            |
| NODES 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | 1 9 9 1 7 1  |                                       |                  |     |          |                            |
| NODES NODES NODES NTROPODIDAE ENTROPUS CICHOPTERA  O 1 0 O 2 O 1 0 O 1 0 O 1 0 O 1 0 O 1 0 O 1 0 O 1 0 O 1 0   | SETODES  |                                       | 0                | -   | 0        |                            |
| NODES 5 1 2  NTROPOLDAE 0 1 0  ICHOPTERA 0 1 0  ICHOPTERA 0 1 0  US 0 1 0  | *   # 1  |                                       |                  |     |          | •                          |
| NTROPODIDAE ENTROPODIO ENTROPOUS  ICHOPTERA  DAE  O 1 0  LO  US  | TRIAENODES   |                                       | <b>S</b> O       | -   | 0        |                            |
| NINDFOLIDAE  O 1 0  ICHOPTERA  DAE  O 1 0  ICHOPTERA  O 1 0  |  |                                       |                  |     |          |                            |
| ICHOPTERA  DAE  O 1 0  | PULYCENTROPUDIDAE  |                                       | (                | ,   | •        |                            |
| ICHOPTERA DAE US 0 1 0   | POLYCENIKOPUS  |                                       | >                | -   | >        |                            |
| DAE<br>US<br>  | ALL TRICHOPTERA  |                                       |                  |     |          | 682                        |
| DAE<br>US<br>  | DOONATA  |                                       |                  |     |          |                            |
| 0 - 0  | GOMPHIDAE  |                                       |                  |     |          |                            |
|  | GOMPHUS  |                                       | 0                | -   | 0        | 1                          |
|  | 1 1 1 1 1 1 1  |                                       |                  |     |          |                            |

|                               |            |             |           | 20/21/03                   |
|-------------------------------|------------|-------------|-----------|----------------------------|
| TRANSECT 5 STATION 1 (CONT'D) | ,          |             | !         |                            |
| _                             | <b>X</b> - | GRAB COUNTS | STAC<br>B | ESTIMATED<br>NO./SQ. METER |
| ACARINA                       | -          | 7           | -         | 28                         |
| GASTROPODA                    | i          | !           | ;         |                            |
| AMNICOLA                      | <b>8</b>   | 225         | <b>80</b> |                            |
| _                             | 4          | <b>8</b>    | 45        |                            |
|                               | -          | 0           | 0         |                            |
| 2 6 7 8 1 8                   |            |             |           |                            |
| GYRAULUS                      | ო          | 23          | თ         |                            |
| LYMNAEA                       | 0          | 7           | 0         |                            |
| 1 1 9 1 2 1 9                 |            |             |           |                            |
| PHYSA                         | 12         | 8           | œ         |                            |
| VALVATA TRICARINATA           | 13         | 7           | 0         |                            |
| ALL GASTROPODA                |            |             |           | 3705                       |
| PELECYPODA                    |            |             |           |                            |
| SPHAERIIDAE<br>PISIDIUM       | 4          | ō           | ო         | 117                        |
|                               |            |             |           | ***                        |
| ALL FELECTION                 |            |             |           | •                          |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA          |     |             |          | 10/12/83      |
|--|-----|-------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 5 STATION 2           | g   | GRAB COUNTS | JNTS     | ESTIMATED     |
| TAXON  | -   | 2           | 8        | NO./SQ. METER |
| CNIDARIA<br>HYDRA                              | 322 | 852         | 20       | 8428          |
| ALL CNIDARIA                                   |     |             |          | 8429          |
| RHABDOCOELA                                    | 9   | 17          | 0        | 186           |
| TRICLADIDA                                     | 0   | 0           | -        | •             |
| NEMERTINEA                                     | 6   | -           | -        | 34            |
| NEMATODA                                       | ស   | 0           | Ξ        | 110           |
| HIRUDINEA PISCICOLIDAE PISCICOLA ALL HIRUDINEA | 0   | -           | -        | <b>2</b>      |
| OLIGOCHAETA<br>Spidnesedma                     |     | ¥0          | ii.      |               |
| OTHER<br>ALL OLIGOCHAETA                       | 52  | . 4         | 134      | 1336          |
| POLYCHAETA MANAYUMKIA SPECIOSA                 | -   | <b>▼</b>    | 0        | 8 80<br>8     |
| C'ADOCERA DAPHNIA                              | ö   | 5           | <b>6</b> | 331           |
|  |     |             |          |               |

| TRANSECT 5 STATION 2 (CONT'D)                   | GRAB     | GRAB COUNTS | s   | ESTIMATED     |
|---|----------|-------------|-----|---------------|
| TAXON   | -        | 2           | e ; | NO./SO. METER |
|   | 0        | ß           | 0   |               |
| U-MAR AN COMMEN                                 |          | 0           | 0   |               |
|   |          |             |     | -4            |
| ALL COPEPODA                                    |          |             |     |               |
| AMPHI PODA<br>GAMMARUS                          | 9        | 7           | 91  |               |
| HYALELLA AZTECA                                 | ٥        | 0           | 8   |               |
| ALL AMPHIPODA                                   |          |             |     | 627           |
| DIPTERA<br>CHIRONOMIDAE                         | 11       | 7           | 20  | 303           |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>Hexagenia       | -        | 0           | 0   |               |
| ALL EPHEMEROPTERA                               |          |             |     | _             |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | <b>*</b> | ٥           | 0   |               |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE                | 0        | ю           | ø   |               |
| HYDROPSYCHE                                     | g        | 7           | ₩   |               |
| LEPTOCERIDAE<br>OECETIS                         | -        | 0           | 0   |               |
| ALL TRICHOPTERA                                 |          |             |     | 186           |
| ODONATA<br>GOMPHIDAE                            | 8        | 0           | 0   | <del>-</del>  |
| GOMPHOS   |          |             |     | 3             |

10/12/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

8-219

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |          |       |              | 10/12/83                                |
|---|----------|-------|--------------|---|
| TRANSECT 5 STATION 2 (CONT'D)           | Š        | 9     |              |   |
| TAXON                                   | ž –      | 1 2 3 | S E          | ESTIMATED NO./SQ. METER                 |
| GASTROPODA                              |          |       |              | 1 |
|   | 9        | 5     | <u>-</u>     |   |
| ELIMIA LIVESCENS                        | 30       | 1     | £            |   |
| FERISSIA                                | -        | 0     | 0            |   |
| GYRAULUS                                | 0        | 0     | -            |   |
| *************************************** |          | •     | •            |   |
|   | n        | >     | -            |   |
| PLEUROCERA ACUTA                        | 0        | 8     | 8            |   |
| VALVATA TRICARINATA                     | •        | 4     | 4            |   |
| ALL GASTROPODA                          |          |       |              | 1295                                    |
| PELECYPODA<br>Sphaeriidae               |          |       |              |   |
| PISIDION                                | <b>o</b> | 0     | <del>0</del> | 193                                     |
| ALL PELECYPODA                          |          |       |              | 193                                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |             |     |     | 10/12/83      |  |
|---------------------------------------|-------------|-----|-----|---------------|--|
| ST. CLAIR RIVER TRANSECT 5 STATION 3  | GRAB COUNTS | 000 | NTS | ESTIMATED     |  |
| TAXON                                 | - !         | 2   | e   | NO./SQ. METER |  |
| CNIDARIA<br>Hydra<br>                 | 64          | 4   | 61  | 888           |  |
| ALL CNIDARIA                          |             |     |     | 888           |  |
| RHABDOCOELA                           | က           | ٥   | ٥   | 52            |  |
| NEMERTINEA                            | 0           | 8   | g   | S.            |  |
| NEMATODA                              | -           | a   | 8   | 36            |  |
| OLIGOCHAETA<br>Nais                   | 0           | 0   | 4   |               |  |
| SPIROSPERMA                           | -           | 0   | 0   |               |  |
| OTHER<br>ALL OLIGOCHAETA              | 6           | 4   | 5   | 275           |  |
| MANAYUNKIA SPECIOSA                   | 0           | 8   | 0   | <b>2</b>      |  |
| ALL POLYCHAETA                        |             |     |     | <b>7</b>      |  |
| CLADOCERA<br>Bosmina                  | 0           | 0   | -   |               |  |
| ALMINA                                | 7           | ∞   | ũ   |               |  |
| 1                                     | 0           | 0   | -   |               |  |
| ALL CLADOCERA                         |             |     |     | 220           |  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA               | DATA                  |      |             |            | 10/12/83      |
|---|-----------------------|------|-------------|------------|---------------|
| TRANSECT 5 STATION 3 (CONT'D)                       |                       | 8490 | SPAR COUNTS | MTA        | FCTTMATED     |
|   |                       | -    | 8           | , m        | NO./SQ. METER |
| COPEPODA<br>DIAPTOMUS                               | ,<br>;<br>;<br>;<br>; | ٥    | 8           | 6          |               |
| EPISHURA LACUSTRIS                                  |                       | ø    | 4           | 0          |               |
| ALL COPEPODA  |                       |      |             |            | 103           |
| AMPHIPODA   | •                     | 0    | 0           | -          | ۲ (           |
| ALL AMPHIPODA                                       |                       |      |             |            | _             |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALL DIPTERA |                       | 00   | <b>v</b> 0  | <b>ā</b> - | 35.           |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS     |                       | 0    | 0           | -          |               |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE                    |                       | +    | 0           | Ξ          |               |
| HYDROPSYCHE   |                       | ю    | 0           | 5          |               |
| ALL TRICHOPTERA                                     |                       |      |             |            | 255           |

| TAGNALLATUS  TRANSECT 6 STATION 1  GRAB COUNTS ESTIMAT  26 0 0 179  40 2 16 399  0 28 59 58  0 1 0 7  2 18 18 262  41 29 63  2 0 1 0  41 29 63  AMELLATUS  0 1 0  1 1 1  41 29 63  41 0  |                       |      |          |              | 50/71/01                   |
|--|-----------------------|------|----------|--------------|----------------------------|
| 1 2 3 NO./59.  1A 2 3 NO./59.  1A 2 16 399 0 1 0 7 2 18 18 262 11DAE A STAGNALIS 2 1 1 0 1 A STAGNALIS A STAGNALIS C 1 0 0 2 A T 50 70 A T 70 A | TRANSECT              | į    | į        | ;            |                            |
| IIDAE  IIDAE  A STAGNALIS  A ST | TAXON                 | GKAE | 250      | S E          | ESTIMATED<br>NO./SQ. METER |
| I TO AE  A STAGNALIS  A STAGNAL | CNIDARIA<br>HYDRA     | 26   | 0        | 0            | 179                        |
| 1IDAE<br>1 C 28 59<br>0 1 0<br>2 18 18<br>1 C 1<br>A STAGNALIS<br>2 1 1<br>NEA<br>A STAGNALIS<br>A STAGNALIS<br>A STAGNALIS<br>A STAGNALIS<br>A STAGNALIS<br>C 0 2<br>A T 50 70<br>A T 50 70<br>C 1 0<br>C 0 0 2<br>C 0 0 1<br>C 0 0 2<br>C 0 0 0 2<br>C 0 0 1<br>C 0 0 0 0 0<br>C 0 0 0 0 0<br>C 0 0 0 0 0 0 0<br>C 0 0 0 0 0 0 0<br>C 0 0 0 0 0 0<br>C 0 0 0 0 0 0<br>C 0 0 0 0 0 0 0 0<br>C 0 0 0 0 0 0 0 0<br>C 0 0 0 0 0 0 0 0 0<br>C 0 0 0 0 0 0 0 0 0<br>C 0 0 0 0 0 0 0 0 0 0 0 0<br>C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | ALL CNIDARIA          |      |          |              | 179                        |
| IIDAE A ELONGATA A STAGNALIS A | RHABDOCOELA           | 9    | 7        | 9            | 388                        |
| IIDAE A ELONGATA A STAGNALIS NEA  HAETA  S LAMELLATUS  O 1 0 1 1 0 1 1 29 63   | TRICLADIDA            | 0    | 78       | 28           | 588                        |
| IIDAE A ELONGATA A STAGNALIS A STAGNALIS A STAGNALIS A STAGNALIS A TAGNALIS A | NEMERTINEA            | 0    | -        | 0            | ٢                          |
| IIDAE A ELONGATA A STAGNALIS A | NEMATODA              | 8    | <b>ĕ</b> | <del>2</del> | 262                        |
| A STAGNALIS  A STAGNALIS  A STAGNALIS  A T T T T T T T T T T T T T T T T T T   | ON :                  | •    | •        | ,            |                            |
| A STAGNALIS  NEA  NEA  HAETA  O O 2  47 50 70  0 1 0  S LAMELLATUS  O 1 0  | MELUBUELLA ELUMGAJA   | -    | 0        | -            |                            |
| MA 0 0 2  47 50 70  48 29 63  48 29 63  49 63  40 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |                       | ~    | -        | -            |                            |
| MA<br>   | ALL HIRUDINEA         |      |          |              | 14                         |
| 6FMA  A  A  A  A  A  A  A  A  A  A  A  A   | OLIGOCHAETA           |      |          |              |                            |
| A 47 50 70   | SPIROSPERMA           | 0    | 0        | 8            |                            |
| OCHAETA 41 29 63 OCHAETA 0 1 0 CUS LAMELLATUS 0 1 0 OCERA  | STYLARIA              | 47   | 8        | 02           |                            |
| OCHAETA  OUS LAMELLATUS  O 1 0  OUS LAMELLATUS  OCERA  |                       | ;    | 9        | ç            |                            |
| CUS LAMELLATUS 0 1   | ALL OLIGOCHAETA       | ;    | n        | 2            | 2080                       |
| AMELLATUS 0 1  | CLADOCERA             |      |          |              |                            |
| AMELLATUS 0 †  | DAPHNIA               | 0    | -        | 0            |                            |
| ALL CLADGERA   | EURYCERCUS LAMELLATUS | 0    | -        | 0            |                            |
|  | œ                     |      |          |              | 4                          |

| MACRUZUOBENTHUS PUNAR GRAB COUNT DATA               |     |               |           | 20/21/01      |
|---|-----|---------------|-----------|---------------|
| TRANSECT 6 STATION 1 (CONT'D)                       | g   | STATION APPEA | NTS       | FSTIMATED     |
| TAXON   | -   | 7             | 6         | NO./SQ. METER |
| COPEPODA<br>HARPACTICOIOA                           | -   | 0             | 0         |               |
| MACROCYCLOPS  | е   | 0             | 0         |               |
| ALL COPEPODA  |     |               |           | <b>58</b>     |
| OSTRACODA   | 83  | 52            | 112       | 1770          |
| AMPHIPODA<br>GAMMARUS                               | 247 | 22.1          | <b>96</b> |               |
| HYALELLA AZTECA                                     | 86  | 35            | 8         | 54.89         |
| ISOPODA ASELLUS ALL ISOPODA                         | 172 | 58            | <b>‡</b>  | 1687          |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALL DIPTERA | 24. | 475<br>0      | 900       | 4297          |
| EPHEMEROPTERA<br>Caenidae<br>Caenis                 | 5   | 7             | 0         |               |
| EPHEMERIDAE<br>Hexagenia<br>                        | ĸ   | e             | =         |               |
| ALL EPHEMEROPTERA                                   |     |               |           | 282           |

| TRANSECT 6 STATION 1 (CONT'D)           |   |                      |                  |                                      |
|---|---|----------------------|------------------|--------------------------------------|
|   | Č   | 9                    | 9                |                                      |
| TAXON                                   | <b>5</b> -                                | GKAB CUUNIS<br>1 2 3 | S E              | ESTIMATED<br>NO./SQ. METER           |
| TRICHOPTERA                             | 6<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | !<br>!<br>!          | )<br>t<br>;<br>i | }<br>!<br>!<br>!<br>!<br>!<br>!<br>! |
| BRACHYCENTRUS                           | -   | 7                    | 0                |                                      |
| LEPTOCERIOAE                            | •   |                      |                  |                                      |
| CERACLEA                                | -   | 0                    | 0                |                                      |
|   |   |                      | ,                |                                      |
| NECTOPSYCHE                             | 0   | -                    | 0                |                                      |
| DECETIS                                 | 16  | Œ                    | 4                |                                      |
| # # # # # # # # # # # # # # # # # # #   | i   | •                    | r                |                                      |
| SETODES                                 | •   | -                    | 0                |                                      |
|   | ,   |                      |                  |                                      |
| TRIAENODES                              | -   | 0                    | -                |                                      |
| POLYCENTROPODIDAE                       |   |                      |                  |                                      |
| POL YCENTROPUS                          | 00  | 60                   | 7                |                                      |
| ALL TRICHOPTERA                         |   |                      |                  | 413                                  |
| GASTROPODA                              |   |                      |                  |                                      |
| AMNICOLA                                | 99  | 4                    | 101              |                                      |
|   | ç   | ;                    | •                |                                      |
| 111111111111111111111111111111111111111 | 2   | -                    | 4                |                                      |
| GYRAULUS                                | 42  | 32                   | 61               |                                      |
| 1 6 1 4 9 3 4 6                         |   |                      |                  |                                      |
| PHYSA                                   | ō   | 7                    | 9                | ٠                                    |
| VALVATA TRICARINATA                     | -   | C                    | 4-               |                                      |
|   | •   | •                    | •                |                                      |
| ALL GASTROPODA                          |   |                      |                  | 2789                                 |
| PELECYPODA                              |   |                      |                  |                                      |
| SPHAERILDAE<br>SPHAERIUM                | m   | ø                    | •                | 69                                   |
| 191111111111111111111111111111111111111 | •   |                      | •                | }                                    |
| ALL PELECYPODA                          |   |                      |                  | 69                                   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                   |     |             |          | 10/12/83                |
|---|-----|-------------|----------|-------------------------|
| ST. CLAIR RIVER TRANSECT 6 STATION 2                    | GR. | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER |
| CNIDARIA  |     | 000         |          | 1661                    |
| HYDRA   | 4   | 200         | :        | -                       |
| ALL CNIDARIA  |     |             |          | 1921                    |
| RHABDOCOELA   | O   | 39          | 22       | 482                     |
| TRICLADIDA  | 17  | 0           | 38       | 386                     |
| NEMERTINEA  | -   | 0           | 8        | 23                      |
| NEMATODA  | 23  | 0           | -        | 165                     |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>GLOSSIPHONIA COMPLANATA | 0   | 0           | -        |                         |
| PISCICOLIDAE<br>PISCICOLA                               | 0   | -           | 0        |                         |
| ALL HIRUDINEA   |     |             |          | 4                       |
| OLIGOCHAETA<br>Spirosperma                              | Ξ   | -           | 4        |                         |
| STYLARIA  | 8   | 401         | 222      |                         |
| OTHER ALL   | 249 | 67          | 146      | 7720                    |
|   |     |             |          |                         |

| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | EPHEMEROPTERA |
|---|---------------|

|  |   | g   | GRAB COUNTS | CNTS     | ESTIMATED                               |
|--|---|-----|-------------|----------|---|
|  |   | -   | 1           | ,        | NO./SQ. METER                           |
| CLADOCERA BOSMINA                          | 1<br>5<br>3<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 0   | 0           | -        | 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| 1 1 1 1 1 1 1 1                            |   |     | •           |          |   |
| DAPHNIA                                    | •   | 38  | 19          | 4        |   |
| SIDA CRYSTALLINA                           |   | 0   | 0           | -        |   |
| ALL CLADOCERA                              |   |     |             |          | 44 1                                    |
|  |   | -   | 0           | 0        |   |
| HARPACTICOIDA                              |   | 16  | ٥           | ٥        |   |
| MACROCYCLOPS                               |   | -   | 0           | ٥        |   |
| ALL COPERODA                               |   |     |             |          | 124                                     |
| AMPHIPODA                                  |   | į   | Ş           |          |   |
| COXCEETAN                                  |   | =   | 35          | 761      |   |
|  |   | 7   | 21          | 4        |   |
| . –  |   | 0   | 0           | -        |   |
| ALL AMPHIPODA                              |   |     |             |          | 3471                                    |
| ISOPODA                                    |   | ,   | •           | c        |   |
|  |   | ٧   | >           | <b>v</b> | 07                                      |
| ALL ISOPODA                                |   |     |             |          | 28                                      |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE |   | 336 | 0.4         | 208      | 4<br>325<br>325                         |
| בנו סוריהגא                                |   |     |             |          | 4334                                    |

10/12/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

| HEXAGENIA        | 22 | 4 | 4 |
|------------------|----|---|---|
| *****            |    |   |   |
| LL EPHEMEROPTERA |    |   |   |

| TRANSECT 6 STATION 2 (CONT'D)  ALL COLEOPTERA  HYDROPYCHIAN  HYDROPYCHAN  HYDROPYCHAN  HYDROPYCHAN  HYDROPYCHAN  HYDROPYCHAN  HYDROPYCHAN  HYDROPYCHAN  HYDROPYCHAN  TRIANOPES  POLYCENTROPODIAE  POLYCENTROPODIAE  POLYCENTROPODIAE  POLYCENTROPODIAE  B B 9  200  ALL TRICHOPTERA  ACARINA  ACARINA  ACARINA  ALL GASTROPODA  ANNICOLA  STATOPODA  ANNICOLA  TO 14  TO  | MACROZOOBENTHOS PONAR GRAB COUNT DATA   | TA         |      |       | 00/11/01  |
|--|---|------------|------|-------|-----------|
| 1 2 3  PTERA  HIDAE  CHE  CHIA  LIDAE  CHIA  CHIA  DAE  CHIA  CHIA  DAE  CHIA  CHIA  DAE  CHIA  DAE  CHIA  DAE  CHIA  CHIA  DAE  CHIA  DAE  CHIA  CHIA  DAE  CHIA  | 6 STATION 2                             | 85         | AB C | SUNTS |           |
| THE TERM  HIDAE  CHE  CHIA  HIDAE  CHIA  DAE  CHIA  CHIA |   | -          |      | 6     | NO./50. M |
| TERA TERA TERA TERA TERA TERA TERA TERA  |   |            |      |       |           |
| TERA  IDAE  HIA  HIA  HIA  HIA  HIA  HIA  HIA  H   | DUBIRAPHIA                              | 0          | •    | •     |           |
| TDAE HE HE HE HIA  | ALL COLEOPTERA                          |            |      |       | 1         |
| HIDAE CHE CHE CHE CHE CHIA TO 0 1 0 1 DAE CHIA D | TRICHOPTERA                             |            |      |       |           |
| 1DAE CHIA DAE ES CHIA DAE CO   | HYDROPSYCHE<br>HYDROPSYCHE              | ۰          |      | -     |           |
| CHIA  CHIA  CHIA  DAE  ES  ES  CHIA  DAE  CO 1 0 1  CO | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |            |      |       |           |
| DAE ES CS  | ORTHOTRICHIA                            | 0          |      |       |           |
| DAME ES  POPODIDAE  ROPTERA  OPTERA  IVESCENS  TRICARINATA  3 3 2  TRICARINATA  3 3 2  14 48  15 24 73  17 355  18 8 9 9  10 00  10 10 10  11 10 1 |   |            |      |       |           |
| ES   | LEPTOCERIDAE<br>Mystactofs              | 0          |      | •     |           |
| PODDIDAE  ROPUS  | 1 | •          |      |       |           |
| OPTERA  OPTERA  OPTERA  TVESCENS  TRICARINATA  TRICARINAT | TRIAENDDES                              | 0          |      |       |           |
| ROPUS  POPTERA  OPTERA  IVESCENS  IVESCENS  TRICARINATA  3 3 2  10 0 0 | POLYCENTROPODIDAE                       |            |      |       |           |
| OPTERA  OPTERA  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | POLYCENTROPUS                           | €          | _    |       |           |
| 1VESCENS 1VE | ALL TRICHOPTERA                         |            |      |       | 200       |
| 1VESCENS 5 2 1 7 35 6 3 38 21 7 35 6 3 38 21 7 10 0000 A 14 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16   | ACARINA                                 | 8          |      |       |           |
| TRICARINATA 3 3 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 2 1 2  | GASTROPODA                              |            |      |       |           |
| TRICARINATA 3 3 2 1 2 1 3 3 2 1 3 3 2 2 1 3 3 3 2 3 3 2 3 3 3 3  | AMNICOLA                                | <b>4</b> 3 | 2    |       |           |
| 7 35 6 3 38 21 0PQDA 7 10 14   | ELIMIA LIVESCENS                        | S.         |      | 1     |           |
| 7 35 6 3 38 21 0PQDA 7 0 14  |   |            |      |       |           |
| 3 38 21<br>  | GYRAULUS                                | 7          | m    |       |           |
| TRICARINATA 3 3 2 OPODA  7 0 14  | W AND                                   | m          | m    |       | •         |
| TRICARINATA 3 3 2  | 3 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |            |      |       |           |
| OPODA 21   |   | m          |      |       |           |
| AE 7 0 14  | ALL GASTROPODA                          |            |      |       | 2521      |
| ERIDAE<br>IDIUM 7 0 14   | PELECYPODA                              |            |      |       |           |
| \$ 1   | SPHAERIIDAE<br>PISIDIUM                 | 7          |      |       | 145       |
|  |   |            |      |       | ***       |

|   |            |             |     | 10/17/83                   |
|---|------------|-------------|-----|----------------------------|
| ST. CLAIR RIVER TRANSECT 6 STATION 3                    | ć          | i i         |     |                            |
| TAXON   | <u> </u>   | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                                       | 73         | 4           | c   | 551                        |
| ALL CNIDARIA  |            |             |     | 551                        |
| RHABDOCOELA   | 7          | 80          | ĸ   | 372                        |
| TRICLADIDA  | 0          | 6           | 61  | 683                        |
| NEMERTINEA  | 12         | -           | 8   | 165                        |
| NEMATODA  | 27         | <b>36</b>   | 67  | 826                        |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>GLOSSIPHONIA HETEROCLITA | -          | 0           | •   |                            |
| MILN  | -          | 0           | 0   |                            |
| ALL HIRUDINEA   |            |             |     | 21                         |
| OLIGOCHAETA<br>SPIROSPERMA                              | <b>c</b> o | 28          | 4   |                            |
| STYLARIA  | 27         | 0           | 0   |                            |
| OTHER<br>ALL DIGOCHAETA                                 | 403        | 439         | 456 | 6996                       |
| · · · · · · · · · · · · · · · · · · ·                   |            |             |     |                            |

| (O. INDA) S NOTIFIC D CONSTRUCT            |          |           |             |  |
|--|----------|-----------|-------------|--|
| TAXON                                      | GRA<br>A | න<br>වි ද | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER                     |
| CLADOCERA                                  |          | •         |             | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
|  | 9        | >         | ,           |  |
| SIDA CRYSTALLINA                           | 60       | 0         | 0           |  |
| ALL CLADOCERA                              |          |           |             | 200  |
| COPEPODA                                   |          |           |             |  |
| HARPACTICOIDA                              | •        | Ø         | 0           |  |
| LIMNOCALANUS                               | 0        | -         | ٥           |  |
| MACROCYCLOPS                               | -        | 0         | -           |  |
| ALL COPEPODA                               |          |           |             | 83   |
| AMPHI PODA<br>GAMMARUS                     | 75       | 4         | 99          | 666  |
| ALL AMPHIPODA                              |          | •         |             | 688  |
| ISOPODA<br>ASELLUS                         | •        | 0         | 4           | 28   |
| ALL ISOPODA                                |          |           |             | 58   |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE | 0 fe     | 1 233     | 250         | <b>5</b>                                       |
| EMPIDIDAE<br>All Giptera                   |          | -         | 0           | 6102   |
| EPHEMEROPTERA<br>Caenidae<br>Caenis        | n        | -         | 0           |  |
| EPHEMERIDAE<br>HEXAGENIA                   | 96       | 4         | 4.          |  |
| ALL EPHEMEROPTERA                          |          |           |             | 1253   |

10/12/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |                  |          |     | 10/12/83      |
|---|------------------|----------|-----|---------------|
| TRANSECT 6 STATION 3 (CONT'D)                   | 0                |          |     |               |
|   | 4<br>4<br>7<br>7 | 1 2 3    |     | NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | 0                | -        | 0   |               |
| POLYCENTROPODIDAE<br>NEURECLIPSIS               | -                | 0        | 0   |               |
| ALL TRICHOPTERA                                 |                  |          |     | 4             |
| ACARINA   | 0                | 0        | -   | 7             |
| GASTROPODA<br>Amnicola                          | 74               | 13       | 91  |               |
| ELIMIA LIVESCENS                                | 0                | 0        | 8   |               |
| PHYSA   | п                | 0        | 7   |               |
| ALL GASTROPODA                                  |                  |          |     | 751           |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM           | п                | <b>7</b> | ın. | 145           |
| ALL PELECYPODA                                  |                  |          |     | 145           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA   | GRAB COUNT DATA      |     |             |            | 10/12/83      |
|---|----------------------|-----|-------------|------------|---------------|
| ST. CLAIR RIVER TRA                     | TRANSECT 7 STATION 1 | æ   | GRAB COUNTS | UNTS       | ESTIMATED     |
| TAXON                                   |                      | -   | 8           | 6          | NO./SQ. METER |
| CNIDARIA                                |                      | 291 | 235         | 388        | 6294          |
| ALL CNIDARIA                            |                      |     |             |            | 6294          |
| RHABDOCOELA                             |                      | -   | •           | -          | -             |
| TRICLADIDA                              |                      | 4   | 25          | 0          | 200           |
| NEMERTINEA                              | •                    | 0   | 8           | 6          | 289           |
| NEMATODA                                |                      | m   | 4           | <b>4</b> 5 | 427           |
| OL I GOCHAETA<br>NA I S                 |                      | Ø   | 4           | 0          |               |
| SPIROSPERMA                             |                      | 43  | 7.4         | 26         |               |
| STYLARIA                                |                      | 7.1 | 84          | 36         |               |
| OTHER                                   |                      | 151 | 108         | 34         | •             |
| ALL OLIGOCHAETA                         |                      |     |             |            | 4614          |
| CLADOCERA                               |                      | 0   | ٥           | •          |               |
| 111111111111111111111111111111111111111 |                      | ;   | •           | •          |               |
| DAPHNIA                                 |                      | 4   | 4           | N          |               |
| ALL CLADOCERA                           |                      |     |             |            | 145           |

| MACRDZOOBENTHOS PONAR GRAB COUNT DATA |          |             |          | 10/12/83                   |
|---------------------------------------|----------|-------------|----------|----------------------------|
| TRANSECT 7 STATION 1 (CONT'D) TAXON   | GRAE     | GRAB COUNTS | NTS<br>B | ESTIMATED<br>NO./SQ. METER |
| COPERODA                              | -        | 0           | 0        | 1                          |
|                                       | ;        | •           | 9        |                            |
| DIAPTOMUS                             | 9        | 9           | 2        |                            |
| HARPACTICOIDA                         | 0        | -           | 80       |                            |
| ALL COPEPODA                          |          |             |          | 248                        |
| OSTRACODA                             | -        | 8           | 0        | 21                         |
| AMPHIPODA<br>Gammarus                 | 155      | 19          | 60       |                            |
|                                       | *        | ď           | C.       |                            |
| ALL AMPHIPODA                         | ;        |             | )        | 2300                       |
| ISOPODA<br>Lirceus                    | 0        | -           | 0        | 7                          |
| ALL ISOPODA                           |          |             |          | •                          |
| DIPTERA                               | •        | •           | •        |                            |
| CERATOPOGONIDAE<br>CHTDDANNIDAE       | 189      | 7 68        | <b>.</b> | 1970                       |
| EMPIDIDAE<br>ALL DIPTERA              | 0        | -           | 0        | 1997                       |
| EPHEMEROPTERA                         |          |             |          |                            |
| CAENIDAE<br>Caenis                    | <b>‡</b> | 28          | ō        |                            |
| EPHEMERIDAE<br>Heradenia              | Ξ        | 4           | 4        |                            |
|                                       |          |             |          |                            |
| BAETISCIDAE                           | ¢        | c           | •        |                            |

B-233

| ### COUNTS   1   | ### COUNTS  ### CO | MACROZOOBENTHOS PONAR GRAB COUNT DATA           |          |           |     | 10/12/83      |
|--|--|---|----------|-----------|-----|---------------|
| FIDAE SYCHE SYCH SYCHE SYCH SYCHE SY | FIDAE FIRUS  | TRANSECT 7 STATION 1 (CONT'D)                   | <b>₽</b> | 000<br>80 | NTS | ESTIMATED     |
| RIDAE SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCHE SYCHE SYCH SYCHE SYCHE SYCHE SYCHE SYCH SYCHE SYCHE SYCHE SYCH SYCH SYCH SYCH SYCH SYCH SYCH SYCH      | RIDAE TRUS TRUS TRUS TRUS TRUS TRUS TRUS TRUS  |   | -        | 7         | 6   | NO./SQ. METER |
| HIGAE PSYCHE CHE CHE CHE CHE CHE CHE CHE CHE CHE   | HIGAE PSYCHE CHE DAE CHE CHE CHE CHE CHE CHE CHE CHE CHE CH  | TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | 4        | 62        | -   |               |
| CHE  | CHE  | # C1 11 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2       |          |           |     |               |
| CHE  | CHE  CHE  CHE  CHE  CHE  CHE  CHE  CHE   | CHEUMATOPSYCHE                                  | •        | 0         | -   |               |
| CHE  | CHE  |   | 0        | 1         | 0   |               |
| CHE  | CHE  | # I I I I I I I I I I I I I I I I I I I         |          |           |     |               |
| CHE  CHE  3 0 1 0  1 0 1 0  DPODIDAE  PSIS  OPTERA  OP | CHE  CHE  3 0 1 0  DPODIDAE  BYSIS  OPTERA  OP | LEPTOCERIDAE                                    | c        | -         | 0   |               |
| CHE  CHE  3 0 1 0  ES  DPODIDAE  PSIS  OPTERA  | CHE  CHE  3 0 1 0  DPODIDAE  DPODIDAE  DPTERA  OPTERA  |   | •        | •         | •   |               |
| 3 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 1 0  | 3 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0  | NECTOPSYCHE                                     | 0        | -         | 0   |               |
| DPODIDAE  DPODIDAE  PSIS  DPTERA  OPTERA  OPTE | ES 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0   | 0FCFT1S   | 60       | 0         | 0   |               |
| OPPODIDAE OPTERA | OPODIDAE OPTERA  | 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2         |          |           |     |               |
| OPTERA  OPTERA | OPTERA  OPTERA | TRIAENODES                                      | 0        | -         | 0   |               |
| OPTERA  OPTERA | OPTERA  OPTERA |   |          |           |     |               |
| OPTERA  OPTERA | OPTERA  OPTERA | POLYCENTROPODIOAE<br>NEURECLIPSIS               | 0        | œ         | 0   |               |
| OPTERA OP | OPTERA OP | # L I I I I I I I I I I I I I I I I I I         |          |           |     | 000           |
| 26 68 93  IVESCENS  2 0 0  21 18 0  2 16 0  20000A  10000A  10 | 26 68 93  IVESCENS  2 0 0  21 18 0  2 16 0  10PODA  1 0 1 0  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | ALL TRICHOPTERA                                 |          |           |     | 278           |
| 26 68 93  IVESCENS  2 0 0  21 18 0  2 16 0  10PODA  10PODA  0 1 0  | 26 68 93  IVESCENS  2 0 0  21 18 0  2 16 0  ARE  ARE  ARE  ENIDAE  | ACARINA   | 0        | 0         | -   | -             |
| 1VESCENS 26 68 83 20 00 00 00 00 00 00 00 00 00 00 00 00   | 1VESCENS  1 VESCENS  2 0 0  2 1 18 0  2 16 0  4 EXILDAE  | GASTROPODA                                      | ;        | ;         | 8   |               |
| 1VESCENS 2 0 0 0 21 18 0 2 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | 1VESCENS 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | AMNICOLA  | 76       | e<br>S    | 3   |               |
| 21 18 0<br>0P00A<br>AE 25 34 0   | 21 18 0<br>0P0DA 2 16 0 10<br>AE 25 34 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1   | ELIMIA LIVESCENS                                | 8        | 0         | 0   |               |
| 2 16 0 16 0 16 0 16 0 16 0 16 0 16 0 16  | 2 16 0 10 16 0 1 0 1 0 ERIIDAE   | GYRAULUS  | 2        | 8         | 0   | ٠             |
| 2 16 0 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4   | 2 16 0 16 AE AE 25 34 0  | *****   |          |           |     |               |
| 0P0DA AE 25 34 0 A A A A A A A A A A A A A A A A A A A   | 0P0DA  AE  25 34 0  0 1 0  ERIIDAE   | PHYSA   | 7        | 9         | 0   |               |
| AE 25 34 0   | AE 25 34 0 M 0 1 0 1 0 ERIIDAE   | ALL GASTROPODA                                  |          |           |     | 1694          |
| AE 25 34 0 0 1 0 1 0   | AE 25 34 0 M 0 1 0 1 0 ERIIDAE   |   |          |           |     |               |
| 25 34 0  | 25 34 0 0 1 0 1 0  | PELECYPODA                                      |          |           |     |               |
|  | SIDIUM A 1   | SPHAERIIOAE                                     |          | 7         | c   |               |
| 0 - 0  | HAERIUM O 1 O 1 O L SPHAERIIDAE  | PISIDIUM  | 67       | đ<br>T    | >   |               |
|  | L SPHAERIIDAE  | SPHAFFILM                                       | 0        | -         | 0   |               |
|  | L SPHAERITDAE  |   |          |           |     | !             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |       |      | 10/12/83      |
|---------------------------------------|----------|-------|------|---------------|
| ST. CLAIR RIVER TRANSECT 7 STATION 2  | ć        | Š     | Ų.   |               |
|                                       | ž ~      | 1 2 3 | n 60 | NO./SO. METER |
| CNIDARIA<br>HYDRA                     | 1627     | 345   | 878  | 19627         |
| ALL CNIDARIA                          |          |       |      | 19627         |
| RHABDOCOELA                           | 0        | 5     | 22   | 220           |
| TRICLADIDA                            | 26       | 0     | 0    | 179           |
| NEMERTINEA                            | 8        | 6     | -    | 4             |
| NEMATODA                              | =        | 15    | 32   | 388           |
| OLIGOCHAETA<br>SPIROSPERMA            | 4        | 64    | 8    |               |
| STYLARIA                              | •        | 8     | 0    |               |
| OTHER<br>ALL OLIGOCHAETA              | <b>6</b> | 9     | មា   | 1863          |
| SPEC                                  | •        | 0     | ٥    | ខ             |
| ALL POLYCHAETA                        |          |       |      | ຂວ            |
| CLADOCERA<br>DAPHNIA                  | -        | 0     | 11   |               |
| Į -                                   | 0        | 0     | -    |               |
| ALL CLADOCERA                         |          |       |      | 131           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA  |     |             |     | 10/12/83      |
|--|-----|-------------|-----|---------------|
| TRANSECT 7 STATION 2 (CONT'D)  | è   | 9           | ,   |               |
| TAXON  | Š - | GKAB COUNTS | . C | NO./SQ. METER |
| COPEPODA<br>MACROCYCLOPS   | 0   | 7           | -   | 21            |
| ALL COPEPODA   |     |             |     | 21            |
| AMPHI PODA<br>GAMMARUS   | 167 | 35          | 0   |               |
| HYALELLA AZTECA  | 1   | -           | 0   |               |
| ALL AMPHIPODA  |     |             |     | 1446          |
| TERRESTRIAL INSECT   | 0   | -           | 0   | 7             |
| DIPTERA<br>CHIRONOMIDAE  | 36  | 27          | 4   | 530           |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENICA   | 4   | •           | c   |               |
| CARTAL CA | •   | •           | >   |               |
| HEXAGENIA  | -   | 0           | 9   |               |
| HEPTAGENIIDAE<br>STENDNEMA   | ٥   | 4           | €   |               |
| ALL EPHEMEROPTERA  |     |             |     | 523           |
| COLEOPTERA   | c   | •           | c   | ٠             |

| STATION 2 (CONT'D)  GRAB COUNTS ESTIMATION (CONT'D)  GRAB CO |   |          |     |            |               |
|--|---|----------|-----|------------|---------------|
| TRIDAE  NTRUS  NTRUS  NTRUS  NTRUS  NTRUS  NTRUS  NTRUS  TO 0  1   | STATION 2                               | 9 00     | 5   | 5          |               |
| A TRIDAE  ATRIDAE  NTRUS  TRIDAE  TRID | TAXON                                   | - (      | 2 2 | n m        | NO./SQ. METER |
| NTRUS<br>HIDAE<br>PSYCHE  CHE  DAE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  C   | TRICHOPTERA                             |          |     | i<br> <br> | , h           |
| HIDAE PSYCHE CHE CHE CHE CHE DAE  CHE DAE  CHE DAE  CHE DAE  CHE DAE  CHE DAE  CHE CHE CHE CHE CHE CHE CHE CHE CHE C   | BRACHYCENTRUS                           | 7        | 0   | 0          |               |
| FSYCHE FSYCH FSYCHE FSYCH FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCH FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCHE FSYCH FSYCHE FSYCHE FSYCH FS |   |          |     |            |               |
| CHE  | CHECKATORYCHIDAE                        | •        | 0   | ,          |               |
| CHE DAE  ODAE  S O O  S O O  S O O  OPTERA  OPTERA  AE  M  S O O  ODODA  AE  FILIDAE  S O O  ODODA  ODODA  S O O  ODODA  ODODA  ODODA  S O O  ODODA   |   | <u> </u> | 0   | N          |               |
| DAE  DAE  DAE  STATEMA  ES  TVESCENS  M  STATEMA  TOPODA  M  STATEMA  TOPODA  M  STATEMA  TOPODA  M  STATEMA  TOPODA   | HYDROPSYCHE                             | ĸ        | 0   | ٥          |               |
| ES   | 1 7 1 1 7 7 7 1 1 3                     |          |     |            |               |
| S 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | LEPTOCERIDAE                            |          |     |            |               |
| FS 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | CERACLEA                                | ო        | 0   | 0          |               |
| PSIS  OPTERA  OPTERA  IVESCENS  AE  FS 2 0  FF 3 0  FF 3 0  FF 4 5 8 3  FF 0 0  FF 1 1 0  M  FF 1 0  F | 1 |          |     |            |               |
| OPDIDAE  PSIS  PSIS  OPTERA  OPTERA  APE  FRIIDAE  2 21 34  42 2 0  48 58 3  46 0 0  9 0 0  17 11 0  M  S 20 0   | MYSTACIDES                              | 16       | 0   | 0          |               |
| PSIS  PSIS  PSIS  OPTERA  1VESCENS   |   |          |     |            |               |
| DPTERA  OPTERA  IVESCENS  1 48 58 3  16 0 0  09 00 0  17 11 0  ERITDAE   | ACTION TOTAL                            | •        |     | į          |               |
| DPTERA  42 2 0  IVESCENS  10 58 3  16 0 0  10 0  10 0  11 11 0  11 11 0  12 11 0  13 11 0  14 15 10  15 20 0   | MCCALTURE                               | ~        | 7   | đ.         |               |
| 1VESCENS 48 58 3 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | ALL TRICHOPTERA                         |          |     |            | 758           |
| 1VESCENS 48 58 3  10FSCENS 48 58 3  10FODA 9 0 0  10FODA 17 11 0  10FODA 5 5 20 0  | ASTROPODA                               |          |     |            |               |
| IVESCENS 48 58 3  16 0 0  16 0 0  17 11 0  M  18 10 1  | AMNICOLA                                | 42       | C)  | 0          |               |
| IVESCENS 48 58 3  10 0000  00000  AE  17 11 0  M  ERIIDAE  |   |          |     |            |               |
| 16 0 0<br>0900A<br>AE 17 11 0<br>M 5 20 0  | ELIMIA LIVESCENS                        | 4<br>89  | 28  | ဇ          |               |
| 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | SAPIN NA                                | 9        | (   | (          |               |
| 9 0 0 0P0DA AE 17 11 0   |   | 2        | >   | >          |               |
| 0P0DA  AE  17 11 0  M  5 20 0  ERIIDAE   | PHYSA                                   | <b>o</b> | 0   | 0          |               |
| 0P0DA AE 17 11 0 M 5 20 0 ERIIDAE  | 1 1 2 1 2                               |          |     |            |               |
| AE 17 11 0 M 5 20 0 ERIIDAE  | ALL GASTROPODA                          |          |     |            | 1226          |
| AERIIDAE  5 IDIUM  5 IDIUM  HAERIUM  5 20 0  | ELECYPODA                               |          |     |            |               |
| SIDIUM 17 11 0 HAERIUM 5 20 0  | SPHAERIIDAE                             |          |     |            |               |
| HAERIUM 5 20 0   | PISIDIUM                                | 11       | ==  | 0          |               |
| SPHAERITOAE  | MILLOUND                                | ŧ        | ç   | c          |               |
| SPHAERIIDAE  | 111111111111111111111111111111111111111 | В        | 2   | >          |               |
|  | '                                       |          |     |            | 365           |

|                                   | 6 14611449           |     |             |          |                         |
|-----------------------------------|----------------------|-----|-------------|----------|-------------------------|
| ST. CLAIR RIVER TRANSECTION TAXON | TRANSECT / STATION & | GRA | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER |
| CNIDARIA                          | ]                    | 108 | £           | 73       | 1336                    |
| ALL CNIDARIA                      |                      |     |             |          | 1336                    |
| RHABODCOELA                       |                      | 0   | ID.         | •        | 06                      |
| TRICLADIDA                        |                      | 8   | 0           | 0        | 7                       |
| NEMERTINEA                        |                      | •   | φ           | 0        | 83                      |
| NEMATODA                          |                      | 8   | č           | Ξ        | 386                     |
| DLIGOCHAETA<br>Spirosperma        |                      | 8   | 0           | 8        |                         |
| OTHER<br>ALL OLIGOCHAETA          |                      | m   | 50<br>50    | <b>G</b> | 262                     |
| CLADOCERA<br>DAPHNIA              |                      | n   | 8           | ~        | 84                      |
| ALL CLADOCERA                     |                      |     |             |          | 4                       |
| COPEPODA<br>DIAPTOMUS             |                      | 0   | 4           | -        |                         |
| EPISHURA LACUSTRIS                |                      | 0   | -           | 0        | ,<br>,                  |
| ALL COPEPODA                      |                      |     |             |          | ĭ                       |

| TRANSECT 7 STATION 3 (CONT'D)           | GRAB | GRAB COUNTS | 51 | ESTIMATED       |
|---|------|-------------|----|-----------------|
| TAXON                                   | -    | 2           | 0  | NO. / SQ. METER |
| AMPHIPDDA                               |      |             |    |                 |
| GAMMARUS                                | 86   | 80          | 4  |                 |
|   | ĸ    | 0           | 0  |                 |
| ALL AMPHIPODA                           |      |             |    | 601             |
| DIPTERA<br>CHIRONOMIDAE                 | თ    | 8           | -  | 83              |
| EDHEWEDODIEDA                           |      |             |    |                 |
| CAENIDAE                                |      |             | ,  |                 |
| CAENIS                                  | a    | 0           | 0  |                 |
| EPHEMERIDAE                             |      |             |    |                 |
| HEXAGENIA                               | 0    | -           | 0  |                 |
| HEDTAGEN: IDAE                          |      |             |    |                 |
| STENONEMA                               | -    | 0           | -  |                 |
| ALL EPHEMEROPIERA                       |      |             |    | 34              |
| TRICHOPTERA                             |      |             |    |                 |
| BRACHYCENIKIOAE<br>BRACHYCENIKUS        | 1    | 0           | 0  |                 |
|   |      |             |    |                 |
| HYDROPSYCHIDAE                          | ,    | ,           |    | •               |
| CHEUMATOPSYCHE                          | 56   | <b>80</b>   | -  |                 |
| HYDRODSYCHE                             | 11   | 0           | 0  |                 |
| • |      |             |    |                 |
| POLYCENTROPODIDAE                       | 7    | -           | 8  |                 |
| 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |      |             |    | ,               |
| ALL TRICHOPTERA                         |      |             |    | 399             |
|   | •    | (           | (  | •               |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |     |             |      | 10/12/83      |
|---------------------------------------|-----|-------------|------|---------------|
| TRANSECT 7 STATION 3 (CONT'D)         | GRA | GRAB COUNTS | NTS. | ESTIMATED     |
| TAXON                                 | -   | 5           | P    | NO./50. MEICK |
| GASTROPODA<br>AMMICOLA                | 8   | Ξ           | 0    |               |
| ELIMIA LIVESCENS                      | €   | ŧ.          | ₩    |               |
| VALVATA TRICARINATA                   | 0   | -           | 0    |               |
| ALL GASTROPODA                        |     |             |      | 310           |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | 0   | 0           | 10   |               |
| SPARRIUM                              | N)  | NO.         | -    |               |
| ALL SPHAERIIDAE                       |     |             |      | 50            |

.

13-240

Can sase.2

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |      |             |          | 50/71/01                |
|---------------------------------------|------|-------------|----------|-------------------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 1  | GRAB | GRAB COUNTS | STS      | ESTIMATED NO./50. METER |
| TAXON                                 | -    | •           | ,        |                         |
| CNIDARIA                              | 7    | 0           | <b>₽</b> | 138                     |
| AL CANDAGE                            |      |             |          | 138                     |
| PLE CONTEST DAMABOCO ELA              | õ    | ∞           | រភ       | 193                     |
|                                       | 11   | g           | 43       | 826                     |
| NEMATODA                              | 122  | 16          | 57       | 1901                    |
| OL IGOCHAETA<br>NAIS                  | ٥    | 0           | -        |                         |
| SPIROSPERMA                           | 244  | 146         | 25       |                         |
| STYLARIA                              | ND.  | 0           | -        |                         |
| OTHER<br>ALL OLIGOCHAETA              | 249  | 275         | 138      | 7651                    |
| POLYCHAETA SPECIOSA                   | 978  | 952         | 663      | 17857                   |
| ALL POLYCHAETA                        |      |             |          | 17857                   |
| CLADOCERA                             | 0    | 35          | ٥        | 220                     |
| ALL CLADOCERA                         |      |             |          | 220                     |

B-241

(

| MACROZOOBENTHOS PONAR GRAB COUNT DATA          |          |             |      | 10/12/83               |
|--|----------|-------------|------|------------------------|
| TRANSECT 8 STATION 1 (CONT'D)                  | GRAB     | GRAB COUNTS | TS c | ESTIMATED NO /SO METER |
| TAXON  |          | ,           | ,    |                        |
| COPERODA                                       | ų        | c           | 0    |                        |
| DIAPTORUS                                      | <u> </u> | •           | ,    |                        |
| STATISTICS OF STATISTICS                       | 0        | -           | 0    |                        |
|  | 0        | 0           | 9    |                        |
| HARPACIECULOR                                  | (        | •           | c    |                        |
| MACDOCYCLOPS                                   | 0        | -           | 4    |                        |
|  |          |             |      | 248                    |
| ALL COPEPODA                                   | •        |             |      | •                      |
| OSTRACODA                                      | â        | •           | 0    | 9                      |
| AMPHIPODA                                      | 99       | 83          | 35   |                        |
| GAMMARUS                                       | }        |             |      |                        |
| HYALELLA AZTECA                                | <b>.</b> | 93          | 77   |                        |
| ALL AMPHIPODA                                  |          |             |      | 1439                   |
| - Codes  | (        | •           | •    |                        |
| ASELLUS  | •        | -           | >    |                        |
|  | 0        | -           | 0    |                        |
| LIRCEUS  | •        |             |      | 7                      |
| ALL ISOPODA                                    |          |             |      | 5                      |
| DIPTERA  | -        | (4          | 0    |                        |
| CERATOPOGONIDAE<br>Chironomidae<br>all diptera | 5        | 5           | 89   | 96 9<br>86 5<br>7      |
|  |          |             |      |                        |

| TAXON  TAXON  TAXON  TAXON  PHEMEROPTERA  CAENIDAE  TO 106  TO 1 1  TO 0  TO 1 0  TO 1 1  TO 0  TO 1 0  TO 1 1  TO 0  TO 1 0  TO 1 0  TO 1 1  TO 0  TO 1 0  TO | ## STATION 1 (CONT.D.)  GRAB COUNTS  1   | S SIALION 1                             |   | 9          |     |   |
|--|--|---|---|------------|-----|---|
| ### 39 50 106    A   | ### 50 106  ### 39 50 106  #### 1 4 7  #### 1 4 7  #### 1 4 7  #### 1 4 7  #### 1 4 7  #### 1 4 7  #### 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |   | Ş                                       |            | 4   |   |
| ######################################   | FRA  AAE  AAE  AAE  AAE  AAE  AAE  AAE   |   | ¥                                       | 200        | S 6 | ESTIMATED<br>NO./SQ. METER              |
| 39 50 106  A 1 1 1  IDAE  A 7 1  IDAE  A 7 7 1 1  OPODIDAE  ROPUS  OPTERA  OPTERA  A 8  OPTERA  OPTERA  OPTERA  A 1 32 1  OPTOA  | 39 50 106  A   | EPHEMEROPTERA                           | 1 | 1          |     | 1 |
| 39 50 106  A   | 39 50 106  A   | CAENIDAE                                |   |            |     |   |
| AFEROPTERA  TRIDAE  ATRICAE  TRIDAE  TRIDAE  TRIDAE  TO 0 1 1 1  TOPODIDAE  TO 1 1 1  TO 0 1 0  TO 1 0  | A A A A A A A A A A A A A A A A A A A  | CAENIS                                  | 39                                      | 50         | 106 |   |
| A E  | A  |   |   |            | •   |   |
| IDAE  IDAE  IDAE  MEROPTERA  MEROPTERA  MARUS  DAE  OPTERA  OPTERA  AF  OPTODA  I  | IDAE  IDAE  IDAE  IDAE  IDAE  A TRIDAE  O 1 1  OPTERA  OPTERA  A ERIDAE  A TRIDAE  O 1 0  I 17  O 1 0  I 17  O 1 0  I 17  O 1 0  I 1 10  A ERIDAE  | EPHEMERIDAE                             |   |            |     |   |
| IDAE   | IDAE   | HEXAGENIA                               | _                                       | 4          | 7   |   |
| IDAE  A TRIDAE  NTRUS  NTRUS  NTRUS  NOPTERA  OPTERA   | IDAE  A TRIDAE  NTRUS  NTRUS  NTRUS  NOTERA  OPTERA  OPTERA  AE  M  INESCENS  OPTERA  OPTODA  INESCENS  OPTERA  OPTODA  INESCENS  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  INESCENS  INESCENS  OPTERA   | 1                                       | •                                       |            | ,   |   |
| FEROPTERA  A TRIDAE  NTRUS  DAE  OPODIDAE  ROPUS  TVESCENS  TVESCE | ## FRIDAE  WARUS  WARUS  WARUS  WARUS  WORDERA  OPTERA  OPTODA  IVESCENS  OPTODA  OPTO | HEPTAGENI IDAE                          |   |            |     |   |
| FEROPTERA  MARUS  DAE  OPODIDAE  NTRUS  DAE  OPTERA  OPTERA  OPTERA  AE  OPTERA  OPTER | FEROPTERA  A TRIDAE  NTRUS  OPAE  OPODIDAE  ROPUS  OPTERA  AE  AE  OPTERA  OPT | STENONEMA                               | C                                       | -          | -   |   |
| FROPTERA  MTRUS  MTRUS  DAE  OPODIDAE  ROPUS  OPTERA  OPTERA  OPTERA  AE  OPTERA  OPTE | FEROPTERA  MATRIDAE  MATRIDAE  MATRIDAE  MATRIDAE  MATRIDAE  1 0 0  1 1  1 32 1  1 1 0  MATRIDAE  1 1 0  1 0  1 0  1 0  1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 1 0   | * | •                                       | •          | -   |   |
| TRIDAE NYRUS DAE OPODIDAE ROPUS OPTERA OPTER | MTRUS  DAE  OPODIDAE  ROPUS  OPTERA  O | ALL EPHEMEROPTERA                       |   |            |     | 1439                                    |
| TRIDAE NTRUS DAE OPODIDAE ROPUS OPTERA OPTER | TRIDAE NTRUS DAE OPODIDAE ROPUS OPTERA OPTERA OPODA  IVESCENS  AE OPODA  AE OPODA  T 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7   |   |   |            |     |   |
| MYRUS  NATRUS  DAE  OPODIDAE  ROPUS  IVESCENS  I 32 1  OPODA  AE  OPODA  I 32 1  OPODA  I 32 1  OPODA  I 1 30 1  OPODA   | NTRUS NTRUS DAE  DAE  OPODIDAE  ROPUS  T 7 17  T |   |   |            |     |   |
| MYRUS  DAE  OPODIDAE  ROPUS  R | OPTERA  OPODIDAE  OPTERA  OPTE | DRACHCENIKIDAE                          |   |            |     |   |
| DAE  OPODIDAE  ROPUS  T 7 7 17  OPTERA  OPTERA | DAE  OPODIDAE  ROPUS  OPTERA  OPTERA  OPTODA  IVESCENS  IVES       | BRACHYCENTRUS                           | -                                       | 0          | 0   |   |
| DYNE ROPUS ROPUS POPTERA OPTERA OPTERA  IVESCENS 1 32 1 OPUDA AE  OPUDA 1 1 0  | OPTERA OPTERA OPTERA OPTERA OPTERA OPTERA OPTERA OPTODA  I 32 1 OPTODA  AE OPTODA  OPTODA OPT |   |   |            |     |   |
| OPTERA  OPTERA | OPTERA OPTERA OPTERA OPTERA OPTERA OPTERA OPODA  ERIIDAE   | CEP ICCENIUAE                           |   |            |     |   |
| OPTERA OPTERA OPTERA OPTERA OPTERA OPTERA OPODA  M 1 1 0   | OPTERA OPTERA OPTERA OPODA  I 32 1 OPODA  M  M  I 1 0  | DECETIS                                 | 0                                       | -          | -   |   |
| OPTERA  OPTERA | OPTERA OPTERA OPTERA OPTERA OPTERA OPUDA  ERIIDAE  | 1 |   |            |     |   |
| TOPTERA  OPTERA  OPTER | TOPTERA  OPTERA  OPTERA  OPTODA  TOPTERA  OPTODA   | POLYCENTROPODIDAE                       |   |            |     |   |
| OPTERA OPTERA OPTERA  IVESCENS 2 10 1 0 1 0 1 32 1 0PUDA AE  | OPTERA  OPTERA  O  | POLYCENTROPUS                           | -                                       | -          | 17  |   |
| OPTERA OPTERA  O 1 0  IVESCENS 2 10 1 1 32 1 OPUDA AE  O 1 0 I 0   | OPTERA OPTERA  O 1 0 1 0 1 0 1 0 1 32 1 0 1 0 1 32 1 0 1 0 1 0 1 0 1 0 1 0 1 0   | 1 ) 5 1 4 5 1 5 1 1 1 1 1 1             |   |            |     |   |
| 1 VESCENS 2 10 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1   | 1 VESCENS 2 10 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1   | ALL TRICHOPTERA                         |   |            |     | 234                                     |
| 1 VESCENS 2 10 1 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0   | O 1 0  IVESCENS 2 10 1  OPUDA AE   | DASTRUPODA                              |   |            |     |   |
| 1 VESCENS 2 10 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0   | IVESCENS  2 10 1 1 32 1 0P0DA  AE  O 1 0 1 0 1 0 1 0 1 0 1 0 1 1 0   | AMNICOLA                                | c                                       | •          | c   |   |
| 1 VESCENS 2 10 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | IVESCENS  1 1 32 1 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 1 0   | *                                       | •                                       | •          | >   |   |
| 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0  | OPODA  AE  OPODA  AE  OPODA  1 32 1  OPODA  1 30 1  OPODA  AE  ERIDAE  | ELIMIA LIVESCENS                        | 7                                       | . <u>c</u> | -   |   |
| 0 1 32 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 1 1   | 0 1 0<br>1 32 1<br>0P0DA<br>AE<br>0 1 0<br>M<br>M<br># 1 1 0   | 115195151 64151                         |   | )          | •   | •                                       |
| 1 32 1 OPUDA AE OPUDA 1 1 0  | 1 32 1 OPGDA  AE  OPGDA  AE  O 1 0  M ERIDAE   | GYRAULUS                                | •                                       | -          | 0   |   |
| 1 32 1 OPUDA AE OPUDA 1 1 0  | 1 32 1 OPODA  AE  O 1 0  M  ERIDAE   | :                                       |   |            | ,   |   |
| OPUDA AE AE 1 1 0  | OPODA  AE  O 1 0  M  T 1 0  ERIDAE   | PHYSA                                   | -                                       | 32         | -   |   |
| OPGDA AE AE 1 1 0  | OPGDA  AE  O 1 0  M  T 1 0  ERIDAE   |   |   |            |     |   |
| AE   | AE 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0   | ALL GASTROPODA                          |   |            |     | 337                                     |
| AE   | AE 0 1 0 1 0 M 1 1 0 0 1 0 0 0 0 0 0 0 0 0   | PELECYPODA                              |   |            |     |   |
| <br>0 -  | 0 1 0 1 0 1 0 PE   | SPHAERIIDAE                             |   |            |     |   |
| · •  | · -  | PISIDIUM                                | c                                       | -          | c   |   |
| -  | O + +  | 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | •                                       | •          | >   |   |
| 1  | W.   | SPHAERIUM                               | -                                       | -          | 0   |   |
|  | AE   | 1 |   |            |     |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |          |          | 10/12/83      |
|---------------------------------------|-----|----------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 2  | ď   | 9        | STATIS   | ESTIMATED     |
| TAXON                                 | -   | 7        | 1 2 3    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | ٥   | 9        | ٥        | 110           |
| ALL CNIDARIA                          |     |          |          | 10            |
| RHABDOCOELA                           | 20  | 68       | ю        | 177           |
| TRICLADIDA                            | -   | 0        | 0        | 7             |
| NEMERTINEA                            | 0   | -        | 0        | 7             |
| NEMATODA                              | 2   | <b>0</b> | <b>8</b> | 44.           |
| OL FGOCHAETA                          | 0   | -        | 0        |               |
| SPINOSPERMA                           | 88  | 7        | 9        |               |
| STYLARIA                              | 5   | 102      | -        |               |
| OTHER<br>ALL OLIGOCHAETA              | 862 | £ 13     | 1385     | 21135         |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA     | ā   | =        | 8        | 1260          |
| ALL POLYCHAETA                        |     |          |          | 1260          |
| CLADGCERA<br>DAPH#IA                  | 0   | 0        | 0        | 62            |
| ALL CLADOCERA                         |     |          |          | <b>29</b>     |
|                                       |     |          |          |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |          | 10/12/83                |
|---------------------------------------|-----|-------------|----------|-------------------------|
| TRANSECT 8 STATION 2 (CONT'D)         |     |             |          |                         |
| ž                                     | g - | GRAB COUNTS | STA<br>3 | ESTIMATED NO./SQ. METER |
| COPEPODA<br>HARPACTICOIDA             | 0   | 16          | 0        | 110                     |
| ALL COPEPODA                          |     |             |          | 110                     |
| AMPHIPODA<br>Gammarus                 | 6   | 141         | 5        |                         |
|                                       | 7   | 113         | ٥        |                         |
| ALL AMPHIPODA                         |     |             |          | 1901                    |
| ISOPODA<br>ASELLUS                    | 0   | -           | o        |                         |
| LIRCEUS                               | 0   |             | 0        |                         |
| ALL ISOPODA                           | •   | )           | •        | <b>58</b>               |
| DIPTERA                               | 216 | 138         | 18<br>25 | 3712                    |
| EPHEMEROPTERA<br>CAENIDAE             |     |             |          |                         |
| CAENIS                                | 0   | 8           | ო        |                         |
| EPHEMERIDAE<br>Hexagenia              | 8   | 9           | 0        | •                       |
| ALL EPHEMEROPTERA                     |     |             |          | 06                      |
| COLEOPTERA<br>ELMIDAE                 | 0   | 0           | -        | 7                       |
| TRICHOPTERA<br>POLYCENTROPODIDAE      | 0   | -           | -        |                         |
| ALL TRICHOPTERA                       |     |             |          | 7                       |

| MACKUZUUBENTHUS PONAR GRAB COUNT DATA |            |             |           | 10/12/83                |
|---------------------------------------|------------|-------------|-----------|-------------------------|
| TRANSECT 8 STATION 2 (CONT'D)         |            |             |           |                         |
| TAXON                                 | <u>a</u> – | GRAB COUNTS | UNTS<br>3 | ESTIMATED NO./SQ. METER |
| GASTROPODA<br>AMVI COLA               | 6          | 67          | 17        |                         |
| ELIMIA LIVESCENS                      | •          | •           | -         |                         |
| GYRAULUS                              | 0          | 20          | 0         |                         |
| AVANA                                 | 0          | <b>‡</b>    | 0         |                         |
| VALVATA TRICARINATA                   | -          | 0           | 0         |                         |
| ALL GASTROPODA                        |            |             | ,         | 908                     |
| PELECYPODA<br>Sphaeridae              |            |             |           | }                       |
| PISIDIUM                              | a          | =           | <b>10</b> | 145                     |
| ALL PELECYPODA                        |            |             |           | 148                     |
|                                       |            |             |           |                         |

| ST. CLAIR RIVER TRANSECT 8 STATION 3 | į   | ,     |          |                         |              |
|--------------------------------------|-----|-------|----------|-------------------------|--------------|
| TAXON                                | Š - | 1 2 3 | 200      | ESTIMATED NO./SQ. METER | TED<br>METEI |
| CNIDARIA<br>Hydra                    | 91  | 7     | 13       | 730                     |              |
| ALL CNIDARIA                         |     |       |          | 730                     |              |
| RHABDOCOELA                          | 117 | 24    | 23       | 1129                    |              |
| TRICLADIDA                           | 36  | 0     | 0        | 386                     |              |
| NEMERTINEA                           | 24  | 16    | -        | 282                     |              |
| NEMATODA                             | Ξ   | 51    | 23       | 583                     |              |
| ⋖ -                                  | -   | 0     | 0        |                         |              |
| HELOBDELLA PAPILLATA                 | -   | 0     | 0        |                         |              |
| PISCICOLIDAE<br>ALL HIRUDINEA        | •   | •     | <b>-</b> | 21                      |              |
| OLIGOCHAETA<br>Spirosperma           | 8   | 32    | 54       |                         |              |
| STYLARIA                             | 8   | -     | 0        |                         |              |
| OTHER<br>ALL OLIGOCHAETA             | 262 | 332   | 224      | 9989                    |              |
|                                      |     |       |          |                         |              |

| THURST TOTAL CAME COOKS DATA        |            |       |     | 10/12/83      |
|-------------------------------------|------------|-------|-----|---------------|
| TRANSECT 8 STATION 3 (CONT'D)       | Č          | 9     | 7   |               |
|                                     | <b>5</b> - | 1 2 3 | 200 | NO./SO. METER |
| POLYCHAETA<br>Manayumkia speciosa   | 16         | 6     | 44  | 289           |
| ALL POLYCHAETA                      |            |       |     | 289           |
| CLADOCERA<br>DAPHNIA                | •          | €     | 0   | 117           |
| ALL CLADOCERA                       |            |       |     | 111           |
| COPEPODA                            | 5          | 0     | 0   |               |
| HARPACTICOIDA                       | 0          | 35    | •   |               |
| ALL COPEPODA                        |            |       |     | 386           |
| AMPHI PODA<br>GAMMARUS              | 128        | 0     | -   |               |
|                                     | 0          | 0     | 8   |               |
| ALL AMPHIPODA                       |            |       |     | 803           |
| JSOPODA<br>ASELLUS                  | <b>5</b>   | 0     | 0   |               |
| LIRCEUS                             | 8          | 0     | 0   |               |
| ALL ISOPODA                         |            |       |     | 145           |
| DIPTERA<br>CHIRONDMIDAE             | 167        | 208   | 129 | 3478          |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS | 0          | 0     | 0   |               |
| EPHEMERIDAE<br>MEXAGENIA            | 2          | 199   | 196 |               |
| ALL EPHEMEROPTERA                   |            |       |     | 3361          |

| MACKUZUUBENIHUS PUNAK GRAB COUNI DATA |       |             |     | 10/12/83  |
|---------------------------------------|-------|-------------|-----|---|
| TRANSECT B STATION 3 (CONT'D)         | į     | į           | ļ   |   |
| TAXON                                 | - 6KA | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER  |
| COLEOPTERA<br>ELMIDAE<br>DUBIRAPHIA   |       | 0           | 0   | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| ALL COLEOPTERA                        |       |             |     |   |
| ACARINA                               | •     | 0           | -   |   |
| GASTROPODA<br>Amicola                 | ‡     | <b>~</b>    | 23  |   |
| PHYSA                                 | m     | 0           | 8   |   |
| VALVATA TRICARINATA                   | 0     | 0           | -   |   |
| ALL GASTROPODA                        |       |             |     | 627   |
| PELECYPODA<br>Sphaeritore             |       |             |     |   |
| PISIDIUM                              | ā     | <b>K</b> D  | 13  | 227   |
| UNIONIDAE<br>ALL PELECYPODA           | -     | •           | 0   | 234   |

1

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |           |                      | 10/13/83                       |
|---|-----------|----------------------|--------------------------------|
| IR RIVER TRANSECT 9 S                                     | GRAB<br>1 | GRAB COUNTS<br>1 2 3 | S ESTIMATED<br>3 NO./SQ. METER |
| RHABDOCOELA   | 0         | -                    | 7 0                            |
| NEMATODA  | -         | 0                    |                                |
| OLIGOCHAETA   | ND.       | •                    | 110                            |
| POLYCHAETA<br>Manayumkia speciosa                         | -         | 0                    | 6<br>6                         |
| ALL POLYCHAETA  |           |                      | 7                              |
| CLADOCERA<br>BOSMINA                                      | 0         | -                    | 2                              |
| ALL CLADOCERA   |           |                      | 2                              |
| COPEPODA  | •         | -                    | •                              |
| HARPACTICOIDA   | 0         | 0                    | _                              |
| ALL COPEPODA  |           |                      | <b>±</b>                       |
| AMPHI PODA<br>GAMMARUS                                    | -         | 8                    | 58                             |
| ALL AMPHIPODA   |           |                      | <b>58</b>                      |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIROMONIDAE<br>ALL DIPTERA | -4        | 0 m                  | 62                             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | _   |             |          | 10/13/83                   |
|---------------------------------------|-----|-------------|----------|----------------------------|
| LAIR RIVER TR                         |     | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
|                                       | o   | -           | 0        | 7                          |
| ALL FISH                              |     |             |          | 7                          |
| CNIDARIA<br>Hydra                     | €   | 7           | -        | 0.1                        |
| ALL CNIDARIA                          |     |             |          | 110                        |
| RHABDOCOELA                           | 9   | 23          | •        | 282                        |
| TRICLADIDA                            | 0   | 0           | 56       | 179                        |
| NEMERTINEA                            | -   | -           | -        | 21                         |
| NEMATODA                              | Ξ   | 21          | 8        | 234                        |
| DLIGOCHAETA<br>NAIS                   | 0   | ٥           | -        |                            |
| SPIROSPERMA                           | 46  | 154         | 82       |                            |
| STYLARIA                              | 69  | 50          | 75       |                            |
| DIHER<br>ALL OLIGOCHAETA              | 178 | 236         | 60       | 7128                       |
| POLYCHAETA<br>Manayunkia speciosa     | 142 | 254         | 222      | 4256                       |
| ALL POLYCHAETA                        |     |             |          | 4256                       |

(

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |        |       |     | 10/13/83      |
|--|--------|-------|-----|---------------|
| TRANSECT 9 STATION 2 (CONT'D)              | GRAE   | 000   | NTS | ESTIMATED     |
|  | -      | 1 2 3 | 6   | NO./SO. METER |
| CLADOCERA DAPHNIA                          | m      | -     | 8   |               |
| SIDA CRYSTALLINA                           | 0      | 0     | -   |               |
| ALL CLADOCERA                              |        |       |     | 88            |
| COPEPODA<br>DIAPTOMUS                      | -      | -     | 0   |               |
| HARPACTICOIDA                              | ø      | 4     | 0   |               |
| ALL COPEPODA                               |        |       |     | 83            |
| OSTRACODA                                  | 0      | 8     | -   | 21            |
| AMPHI PODA<br>GAMMARUS                     | E<br>E | 199   | 288 |               |
| HYALELLA AZTECA                            | 6      | 6     | N)  |               |
| ALL AMPHIPODA                              |        |       |     | 3808          |
| I SOPODA<br>A SELLUS                       | 0      | 0     | n   |               |
| LIRCEUS<br><br>ALL ISOPODA                 | 0      | -     | •   | 99            |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE | 13     | 186   | 7.5 | 2603          |
| ALL DIPTERA                                |        |       |     | ) ! . ]       |

| ERA  AE  AND / SQ.  ERA  AE  AND / SQ.  AND / AND / SQ.  AND / AND | TRANSECT 9 STATION 2 (CONT.D) |      |          |          |                            |
|---|-------------------------------|------|----------|----------|----------------------------|
| A 3 1 5 5 5  ARE A 3 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |                               | GRAB | COUN     | S        | ESTIMATED                  |
| E   | 1                             | -    | 7        | <b>6</b> | NO./SQ. METER              |
| AE  |                               |      |          |          | ;<br>;<br>;<br>;<br>;<br>; |
| AE  | CAENIDAE                      | į    | ,        |          |                            |
| AE A 3 0 6 1 0 1 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0  | CARALS                        | 5    | ຄ        | ស        |                            |
| EROPTERA  A 3 0  ENDAE  A 4 3 0  ES   | EPHEMERIDAE                   |      |          |          |                            |
| EROPTERA  A  ES  CHE  CHE  CHE  CHE  CHE  CHE  CHE  | HEXAGENIA                     | 4    | 6        | 0        |                            |
| DPTERA  IVESCENS  AE  AE  AE  AE  AE  AE  AE  AE  AE  A   | ALL EPHEMEROPTERA             |      |          |          | 331                        |
| DAE  DAE  DAE  CHE  CHE  1 0 0  1 0 0  1 1 1  1 1 1  TRICARINATA  OPODA  AE  AE  AE  AE  AE  AE  AE  AE  AE   | TRICHOPTERA                   |      |          |          |                            |
| ES  | LEPTOCERIDAE                  |      |          |          |                            |
| CHE CHE CHE 1 0 0 1 0 | CERACLEA                      | 0    | -        | 0        |                            |
| DPTERA  IVESCENS  IVESCENS  IVESCENS  I 33 56  I 33 56  I 27 14  I 27 14  TRICARINATA  OPODA  AE  AE  AE  AE  AE  AE  AE  AE  AE  |                               | •    |          | ,        |                            |
| CHE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  | MYSTACIDES                    | 0    | 4        | ~        |                            |
| DPTERA  1 1 1 1  1 WESCENS  1 33 56  1 YESCENS  1 27 14  TRICARINATA  OPODA  AE  AE  AE  AE  AE  AE  AE  AE  AE   | MECTOPOXCHE                   | -    | c        | c        |                            |
| DPTERA  1 1 1 1  1 SS 56  IVESCENS  1 7 7 14  TRICARIMATA  OPODA  AE  AE  AE  AE  AE  AE  AE  AE  AE  |                               | •    | •        | ,        |                            |
| 1 0 0  1 1 1  1 ESCENS  1 0 0  1 1 1 1  1 ESCENS  1 0 0  1 TRICARIMATA  0 1 0  1 27 14  1 27 17 14  1 27 14  1 27 17 14  1 27 17 14  1 27 17 14  1 27 17 14  1 27 17 14  1 27 17 14  1 27 17 17 17  1 27 17 17  1 27 17 17  1 27 17 | OECETIS                       | ဖ    | <b>е</b> | _        |                            |
| 1 0 0  IVESCENS  1 33 56  IVESCENS  1 27 14  TRICARINATA  OPODA  AE  AE  AE  AE  AE  AE  AE  AE  AE   | , ,                           |      |          |          |                            |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | SETODES                       | -    | 0        | 0        |                            |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |                               |      |          |          | !!                         |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | ALL TRICHOPTERA               |      |          |          | 172                        |
| 1 33 56  IVESCENS  1 0 0  TRICARINATA  0 1 0  0PODA  AE  AE  AE  AE  AE  AE  AE  AE  AE   | ACARINA                       | -    | -        | -        | 21                         |
| 1 33 56  IVESCENS 1 0 0 1 27 14  TRICARINATA 0 1 0 0PODA AE   | GASTROPOOA                    |      |          |          |                            |
| 1 VESCENS 1 0 0 1 1 27 14 1 27 14 1 27 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | AMNICOLA                      | -    |          | 99       |                            |
| TRICARINATA 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0   |                               | •    | c        | c        |                            |
| TRICARINATA 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0   |                               | •    | >        | >        |                            |
| TRICARINATA 0 1 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0   | GYRAULUS                      | €    |          | 2        |                            |
| TRICARINATA 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0   |                               | -    |          | 4        |                            |
| TRICARINATA 0 1 0 0-0   |                               | •    |          |          |                            |
| AE AE AE AE AE AE AE AB   | VALVATA TRICARINATA           | 0    | -        | 0        |                            |
| OPODA  AE  AE  AB  50 0   |                               |      |          |          |                            |
| AE 48 53 74 M 5 0 0 C C C C C C C C C C C C C C C C C   | ALL GASTROPODA                |      |          |          | 1150                       |
| ERIIDAE   48 53 74   101UM   48 53 74   101UM   5 0 0   101UM   5 0 0   101UM   101U  | PELECYPODA                    |      |          |          |                            |
| TO   UM   | SPHAERIIDAE                   |      |          |          |                            |
| ARERIUM 5 0 0   | PISIDIUM                      | 84   |          | 4        |                            |
| SPHAERIDAE  | SPHAERIUM                     | ĸ    | 0        | 0        |                            |
| SPHAERI I DAE   | 9 4 9 9 9                     |      |          |          |                            |
|   |                               |      |          |          | 1240                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |          | 10/13/83      |
|---------------------------------------|-----|-------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 9 STATION 3  | GRA | GRAB COUNTS | NTS      | ESTIMATED     |
| TAXON                                 |     | ~           | 6        | NO./SQ. METER |
| CNIDARIA<br>Hydra                     | 08  | ŧ.          | 60       | 109           |
| ALL CNIDARIA                          |     |             |          | 109           |
| RHABDOCDELA                           | 27  | 7           | 24       | 399           |
| TRICLADIDA                            | ٥   | ٥           | 63       | 434           |
| NEMERTINEA                            | •   | ო           | 0        | 76            |
| NEMATODA                              | 41  | ŧ.          | 52       | 599           |
| HIRUDINEA<br>GREGOBELLIDAE            | 0   | 0           | -        |               |
| GLOSSIPHONIA HETEROCLITA              | 0   | 0           | <b>e</b> |               |
| ~                                     | 0   | 0           | -        |               |
| ALL HIRUDINEA                         |     |             |          | <b>3</b>      |
| OLIGOCHAETA<br>Spirosperma            | 98  | £           | •        |               |
| STYLARIA                              | 115 | 88          | 123      |               |
| OTHER                                 | 286 | 215         | 383      |               |
| ALL ULIMUCHAEIA                       |     |             |          | 7100          |

| SPECIOSA  SPECIOSA  SPECIOSA  STATION 3 (CONT'D)  GRAB COUNTS  1 2 3  SPECIOSA  44 47 0  10 1 0  10 1 0  10 1 0  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 2  10 1 350  E  10 1 0  10 1 2  10 1 350   | MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |       |           | 10/13/83                |
|--|---------------------------------------|----------|-------|-----------|-------------------------|
| ### COUNTS   1   | O                                     |          |       |           |                         |
| ETA UNKIA SPECIOSA  LYCHAETA  RA  RA  RA  RA  RA  RA  BOCERA  ADOCERA  ADOC | TAXON                                 | g -      | AB C0 | UNTS<br>3 | ESTIMATED NO./SQ. METER |
| LYCHAETA  RA  RA  IA  IA  ADGCERA  ADGCONIDAE  BA  BC  BC  BC  BC  BC  BC  BC  BC  BC  | <b>.</b>                              | 4        | 47    | 0         | 627                     |
| ## BA  | ALL POLYCHAETA                        |          |       |           | 627                     |
| A  | CLADOCERA                             |          |       |           |                         |
| ADDCERA ADDCER | DAPHNIA                               | <b>o</b> | ហ     | 0         |                         |
| ADGCERA ADGCERA ADGCERA ADGCERA ADGOLDAE OMUS CTICOIDA AO 44 8 ACTICOIDA AO 44 8 ACTICOIDA ACTICOIDA AO 1 0 ACTICOIDA AO 1 2 ACTICOIDA ACTICO ACTICOIDA ACTICO ACTICOIDA ACTICO ACTICOIDA ACTICO ACTICOIDA ACTICO AC | ILYOCRYPTUS                           | C        | c     | -         |                         |
| POIDIDAE 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0   | ALL CLADGERA                          | •        |       | -         | 103                     |
| POIDIDAE  OMUS  OMUS  CTICOIDA  CTICOIDA  OMUS  CTICOIDA  AO 44 8  PEPODA  DA  TO 1 2  DA  RUS  CLA AZTECA  CLA B  CLA CLA B  CLA B  CLA   |                                       |          |       |           |                         |
| OMUS  CTICOIDA  PEPODA  DA  DA  RUS  LLA AZTECA  US  OMIDAE  OMIDAE  OMUS  OMIDAE  OMUS  OMIDAE  OMIDAE  OMIDAE  OMIDAE  OTION 1 2 3 28 76 32 28 76 32 32 38 76 350 30 30 30 30 30 30 30 30 30 30 30 30 30   | CYCLOPOIDIDAE                         | 0        | -     | 0         |                         |
| CTICOIDA  PEPODA  DA  DA  DA  DA  DA  DA  DA  DA  DA   | DIAPTOMUS                             | c        | •     | c         |                         |
| CTICOIDA  PEPODA  DA  DA  DA  DA  DA  DA  DA  DA  DA   |                                       | >        | •     | >         |                         |
| DA   | HARPACTICOIDA                         | 40       | 44    | ∞         |                         |
| DA 10 1 2  DA 10 1 2  BDA 10 1 2  RUS 2 2 1 28 76  LLA AZTECA 2 1 285  HIPODA 2 1 285  PHIPODA 3 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | ALL COPEPODA                          |          |       |           | 647                     |
| PA AZTECA 32 28 76 2 1 285 2 1 285 2 1 285 2 1 285 2 1 285 2 1 285 2 1 285   | OSTRACODA                             | ō        | -     | 7         | 06                      |
| RUS  | AMPHIPODA                             |          |       |           |                         |
| LLA AZTECA 2 1 285 LLA AZTECA 2 1 285 FHIPODA US 2 0 0 OPODA POGONIDAE 0 1 0 OMIDAE 400 161 350  | GAMMARUS                              | 32       | 28    | 9/        |                         |
| PHIPODA  US  OPODA  POGONIDAE  OMIDAE  OPOTOMINA  OPOTO | HYALELLA AZTECA                       | 8        | -     | 285       |                         |
| FHIPODA  US  OPODA  POGONIDAE  OMIDAE  | J 6 1 1 0 0 E 6 1 2 6 6 1 5 6         | ı        | •     |           |                         |
| US 2 0 0 OPODA POGONIDAE 0 1 0 OMIDAE 400 161 350  | ALL AMPHIPODA                         |          |       |           | 2920                    |
| US 2 0 0 0 OPODA POGONIDAE 0 1 0 0 1 0 0 1 0 0 1 0 1 0 0 1 0 1 0   | ISOPODA                               |          |       |           |                         |
| OPODA POGONIDAE 0 1 0 0MIDAE 400 161 350   | LIRCEUS                               | 7        | 0     | 0         | 4                       |
| POGONIDAE 0 1 0<br>OMIDAE 400 161 350  | ALL ISOPODA                           |          |       |           | 4                       |
| POGONIDAE 0 1 0 OMIDAE 400 161 350   | DIPTERA                               |          |       |           |                         |
| 400 161 350  | CERATOPOGONIDAE                       | 0        | -     | 0         |                         |
|  | CHIRONOMIDAE                          | 400      | 161   | 350       | 6274                    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |              |       |             | 10/13/83  |
|--|--------------|-------|-------------|---|
| TRANSECT 9 STATION 3 (CONT'D)              | Š            | Ş     | 911         |   |
| TAXON                                      | ₹<br>\$<br>• | 1 2 3 | 2<br>2<br>8 | ESTIMATED<br>NO./SQ. METER  |
| PTE  | 12           | -     | 8           | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
| EPHEMERIDAE<br>Hexagenia                   | 16           | ဖ     | 0           |   |
| ALL EPHEMEROPTERA                          |              |       |             | 899   |
| TRICHOPTERA<br>HYDROPTILIDAE<br>HYDROPTILA | •            | 0     | 0           |   |
| LEPTOCERIDAE<br>MYSTACIDES                 | -            | 0     | 0           |   |
| OECETIS                                    | 0            | -     | 0           |   |
| TRIAENODES                                 | -            | 0     | 0           |   |
| ALL TRICHOPTERA                            |              |       |             | 28  |
| ODGNATA<br>COENAGRIONIDAE                  | -            | 0     | 0           | ,   |
| ACARINA                                    | -            | 60    | -           | 34  |
| GASTROPODA<br>Amnicola                     | 40           | 27    | 2           |   |
| 1  | -            | -     | 0           |   |
| GYRAULUS                                   | 0            | -     | 8           |   |
| HYSA S                                     | ĸ            | 0     | 23          |   |
| VALVATA TRICARINATA                        | m            | -     | •           | 957   |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM      | =            | 2     | 0           | 220   |
| ALL PELECYPODA                             |              |       |             | 220   |

| ST. CLAIR RIVER TRANSECT 10 STATION 1                     |              | į              | 9   |                            |
|---|--------------|----------------|-----|----------------------------|
| TAXON   | EKAB<br>-    | GRAB COUNTS    | ν e | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA   | 0            | -              | -   | 4-                         |
| NEMERTINEA  | 0            | 0              | -   | 7                          |
| NEMATODA  | 0            | 0              | 6   | 21                         |
| OLIGOCHAETA   | 8            | 25             | 9   | 1178                       |
| CLADOCERA<br>DAPHNIA                                      | 0            | 8              | 0   | 4                          |
| ALL CLADOCERA   |              |                |     | 4                          |
| COPEPODA<br>Harpacticoida                                 | 0            | 0              | -   | 7                          |
| ALL COPEPODA  |              |                |     | 7                          |
| AMPHIPODA<br>Gammarus                                     | 0            | -              | 0   | ۲                          |
| ALL AMPHIPODA   |              |                |     | 7                          |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | <b>40</b> 00 | ۶ <del>د</del> | 27  | 337<br>448                 |
|   |              |                |     |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |        | 10/13/83                |
|---------------------------------------|-----|-------------|--------|-------------------------|
| TRANSECT 10 STATION 1 (CONT'D)        | į   |             | ļ      |                         |
|                                       | - 6 | GRAB COUNTS | 2<br>2 | ESTIMATED NO./SQ. METER |
| EPHEMEROPTERA<br>CAENIDAE             |     | <br>        | <br>   |                         |
| CAENIS                                | -   | 0           | 0      |                         |
| EPHEMERIDAE                           | •   |             | •      |                         |
| HEXAGENIA                             | 8   | 0           | -      |                         |
| ALL EPHEMEROPTERA                     |     |             |        | 28                      |
| GASTROPODA                            |     |             |        |                         |
| ELIMIA LIVESCENS                      | -   | ~           | 0      | 21                      |
| ALL GASTROPODA                        |     |             |        | 21                      |
| PELECYPODA                            |     |             |        |                         |
| PISIDIUM                              | 6   | 0           | 0      | . 12                    |
| ALL PELECYPODA                        |     |             |        | 25                      |

| MACAGOODER TOO FORM GRAD COON DAIN    |     |             |     | 10/13/83      |
|---------------------------------------|-----|-------------|-----|---------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 2 | GRA | GRAB COUNTS | STA | ESTIMATED     |
| TAXON                                 | -   | 2           | , m | NO./SO. METER |
|                                       | 0   | 2           | 0   | 41            |
| ALL CNIDARIA                          |     |             |     | 4             |
| RHABDOCGELA                           | ٥   | ო           | 0   | 21            |
| TRICLADIDA                            | ٥   | -           | ٥   | 7             |
| NEMATODA                              | 0   | ស           | 0   | 34            |
| OLIGOCHAETA<br>Nais                   | 0   | -           | 0   |               |
| STYLARIA                              | 0   | g           | 0   |               |
| OTHER<br>ALL OLIGOCHAETA              | 2   | 200         | 28  | 2100          |
|                                       | 0   | Ŋ           | 4   | 62            |
| ALL POLYCHAETA                        |     |             |     | 62            |
| CLADOCERA<br>DAPHNIA                  | 8   | -           | 0   | 21            |
| ALL CLADOCERA                         |     |             |     | 24            |
| AMPHIPODA<br>GAMMARUS                 | 0   | 7           | -   | និ            |
| ALL AMPHIPODA                         |     |             |     | S<br>S        |
|                                       |     |             |     |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |       |            | 10/13/83      | 83    |
|---|-----|-------|------------|---------------|-------|
| TRANSECT 10 STATION 2 (CONT'D)          | ę   | 2     | ,<br>1     |               | 5     |
| TAXON                                   | Š - | 1 2 3 | <u>ი</u> ო | NO./SQ. METER | METER |
| DIPTERA<br>CERATOPOGONIDAE              | 4   | 13    | g          |               |       |
| CHIRONOMIDAE<br>ALL DIPTERA             | 4   | 167   | 7          | 1191          |       |
| EPHEMEROPTERA                           |     |       |            |               |       |
| CAENIDAE                                | ٥   | 12    | 0          |               |       |
| EPHEMERIDAE<br>JEVAGNAA                 | c   | r     | •          |               |       |
| 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | •   | •     | >          |               |       |
| BAETISCIDAE<br>Baetisca                 | 0   | -     | 0          |               |       |
| ALL EPHEMEROPTERA                       |     |       |            | 103           |       |
| ACARINA                                 | 0   | 6     | -          | <b>78</b>     |       |
| GASTROPODA<br>ELIMIA LIVESCENS          | 8   | 0     | 0          | <del>-</del>  |       |
| ALL GASTROPODA                          |     |       |            | 4             |       |
| SPHAERIIDAE                             | (   | (     | •          | č             |       |
| PISIDION                                | N   | >     | -          | 5             |       |
| ALI DEI ECVOORA                         |     |       |            | 21            |       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |              |             |           | 10/13/83                   |
|---------------------------------------|--------------|-------------|-----------|----------------------------|
| R RIVER TRANSECT 10                   | - g          | GRAB COUNTS | STNI<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA                              | 60           | =           | 0         | 131                        |
| ALL CNIDARIA                          |              |             |           | 131                        |
| RHABDOCOELA                           | α            | 28          | 8         | 262                        |
| TRICLADIDA                            | 0            | 8           | 0         | 124                        |
| NEMERTINEA                            | 0            | ī.          | -         | 110                        |
| NEMATODA                              | Ø            | Ξ           | 28        | 331                        |
| OLIGOCHAETA<br>Nais                   | <b>6</b> 0   | 0           | ٥         |                            |
| SPIROSPERMA                           | -            | 32          | 52        |                            |
| STYLARIA                              | 0            | 47          | ø         |                            |
| OTHER<br>ALL OLIGOCHAETA              | 69           | 307         | 144       | 4401                       |
| POLYCHAETA<br>Manayunkia Speciosa     | 0            | <b>ē</b>    | 0         | 124                        |
| ALL POLYCHAETA                        |              |             |           | 124                        |
| CLADOCERA<br>DAPHAIA                  | <del>-</del> | 5           | -         |                            |
| SIDA CRYSTALLINA                      | 0            | -           | 0         | 0                          |
|                                       |              |             |           | }                          |

B-261

Ĺ

----

. . . . .

مردام الاستان المهاد

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |      | 10/13/83   |
|---------------------------------------|------------|-------------|------|--|
| TRANSECT 10 STATION 3 (CONT'D)        | Š          | 2 E E E E E |      | 1  |
| 7                                     | <b>5</b> - | 5<br>8      | n 60 | NO./SQ. METER  |
| ا ت                                   | ٥          | 0           | -    | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| HARPACTICOIDA                         | 0          | 0           | 32   |  |
| LIMNOCALANUS                          | 0          | 0           | -    |  |
| ALL COPEPODA                          |            |             |      | 234  |
| OSTRACODA                             | 0          | -           | 0    | 1  |
| AMPHI PODA<br>GAMMARUS                | 0          | 20          | 0    |  |
|                                       | 0          | -           | •    |  |
| i —                                   | 0          | m           | 0    |  |
| ALL AMPHIPODA                         |            |             |      | 200  |
| DIPTERA<br>CHIRONOMIDAE               | 168        | 420         | 6.   | 4869   |
| CAENIDAE CAENIDAE CAENIS              | 0          | •           | •    |  |
| EPHEMERIDAE<br>HEXAGENIA              | =          | <b>1</b> 0  | 20   |  |
| ALL EPHEMEROPTERA                     |            |             |      | 716  |

| TAXON  TAXON  TAXON  TAXON  TAXON  TAXON  TRICHOPTERA  HYDROPSYCHE  HYDROPTILIDAE  O 2 0 1 0 1 0 4 0 GASTROPODA  AMNICOLA  AMNICOLA  AMNICOLA  TITLICHOPTERA  TITLICHOPTERA |           |           |                            |
|--|-----------|-----------|----------------------------|
| HIDAE COHE LIDAE LA DAE DAE OPODIDAE ROPUS OPTERA IVESCENS   |           |           |                            |
| HIDAE CHE TONE TONE TONE TONE TONE TONE TONE TON   | , 20<br>8 | STAU<br>3 | ESTIMATED<br>NO./SQ. METER |
| TO A E COMPE COMPOSIDAE COMPOSIDA |           |           |                            |
| LA LA LA DAE DAE OPODIDAE ROPUS OPTERA OPTERA  1 VESCENS 1   | 0         | 0         |                            |
| OPODIDAE COPOSIDAE COPTERA COP | •         | (         |                            |
| OPODIDAE OPOTERA OPTERA | ~         | 0         |                            |
| OPODIDAE ROPUS OPTERA OPTERA IVESCENS 1  |           |           |                            |
| OPODIDAE ROPUS OPTERA OPTERA IVESCENS  | 0         | -         |                            |
| OPTERA  OPTERA  IVESCENS   |           |           |                            |
| OPTERA  OPTERA  IVESCENS   | -         | 0         |                            |
| IVESCENS   |           | •         | į                          |
| I VESCENS  |           |           | 34                         |
| 1 VESCENS  | 4         | 0         | 28                         |
| IVESCENS   |           |           |                            |
| ELIMIA LIVESCENS   | 36        | 4         |                            |
|  | ď         | ٠ .       |                            |
|  | י         | >         |                            |
| GYRAULUS   | Ø         | 0         |                            |
| C VSAHA  | ď         | c         |                            |
|  | •         | •         |                            |
| VALVATA TRICARINATA  | -         | 0         |                            |
| ALL GASTROPODA   |           |           | . 144                      |
| PELECYPODA   |           |           |                            |
| SPHAERIIDAE  |           |           |                            |
| PISIDIUM   | Ø         | 8         | 83                         |
|  | •         | c         |                            |
| ALL PELECYPODA   | -         | >         | 8                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA               |      |             |     | 10/17/83           |
|---|------|-------------|-----|--------------------|
| LAKE ST. CLAIR TRANSECT 11 STATION 1                | GRAE | GRAB COUNTS | STA | ESTIMATED NO ANTER |
|   | •    | •           |     |                    |
| CNIDAKIA<br>HYDRA                                   | 0    | -           | -   | 4                  |
| ALL CNIDARIA  |      |             |     | 4                  |
| RHABDOCOELA   | 4    | 6           | -   | 55<br>50           |
| NEMERTINEA  | 0    | 0           | -   | •                  |
| NEMATODA  | 56   | 28          | 50  | 716                |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>HELOBDELLA STAGNALIS | 0    | •           | -   | ٢                  |
| OLIGOCHAETA<br>Nais                                 | -    | 0           | 0   |                    |
| SPIROSPERMA   | 7    | 50<br>60    | •   |                    |
| OTHER<br>ALL OLIGOCHAETA                            | 53   | 78          | 22  | 1770               |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA                   | 9    | 0           | 170 | 20<br>40           |
| ALL POLYCHAETA                                      |      |             |     | 1981               |
| CLADOCERA<br>SIDA CRYSTALLINA                       | •    | 0           | -   |                    |
| ALL CLADOCERA                                       |      |             |     |                    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |    |       |          | 10/17/83  |
|---|----|-------|----------|---|
| TRANSECT 11 STATION 1 (CONT'D)          | 5  | 9     | 9        |   |
| TAXON                                   |    | 1 2 3 | e<br>E   | NO./SQ. METER   |
| RA L                                    | -  | ٥     | 0        | )<br>}<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| HARPACTICOIDA                           | 72 | 63    | 117      |   |
| MACROCYCLOPS                            | -  | 0     | 0        |   |
| ALL COPEPODA                            |    |       |          | 1749  |
| OSTRACODA                               | 7  | 1,1   | 2        | 358   |
| AMPHIPODA<br>GAMMARUS                   | 76 | 4     | <u>+</u> | 1894  |
| ALL AMPHIPODA                           |    |       |          | 1894  |
| DIPTERA<br>CHIRONOMIDAE                 | 28 | £     | 9        | 613   |
| EPHEMERIDAE<br>Ephemeridae<br>Hexagenia | 8  | 116   | <b>0</b> |   |
| ALL EPHEMEROPTERA                       |    |       |          | 2169  |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OECETIS  | ~  | 5     |          |   |
| ALL TRICHOPTERA                         |    |       |          | 179   |
| ACARINA                                 | -  | -     | -        | 21  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA  |                                       |             |          | 10/11/83   |
|--|---------------------------------------|-------------|----------|--|
| TRANSECT 11 STATION 1 (CONT'D)         |                                       | į           |          |  |
|  | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER   |
| GASTROPODA                             | 6                                     | 7           | -        | 3<br>6<br>1<br>8<br>3<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| BITHYNIA                               | -                                     | 0           | 0        |  |
| ELIMIA LIVESCENS                       | 0                                     | 0           | -        |  |
| GYRAULUS                               | 9                                     | 8           | 8        |  |
| PLEUROGERA ACUTA                       | 8                                     | 0           | 0        |  |
| VALVATA TRICARINATA                    | 4                                     | ın          | -        |  |
| ALL GASTROPODA                         |                                       |             |          | 248  |
| PELECYPODA<br>Sphaeridae<br>Sphaeridae |                                       |             |          |  |
| PISIOTUM                               | Ξ                                     | 9           | ıΩ       |  |
| SPHAERIUM                              | 0                                     | 0           | -        |  |
| ALL SPHERIDAE                          |                                       |             |          | 186  |

|                                      |               |       |                       | 20/21/21      |
|--------------------------------------|---------------|-------|-----------------------|---------------|
| LAKE ST. CLAIR TRANSECT 11 STATION 2 | Š             | č     | 0                     |               |
| TAXON                                | 4<br>2<br>5 ← | 1 2 3 | S<br>S<br>S<br>S<br>S | NO./SQ. METER |
| RHABDOCOELA                          | 7             | 6     | 0                     | 40            |
| NEMATODA                             | 135           | 139   | 149                   | 2913          |
| HIRUDINEA                            |               |       |                       |               |
| MELOBOELLA ELONGATA                  | 0             | 8     | 0                     |               |
|                                      | 0             | 0     | -                     |               |
| ALL HIRUDINEA                        |               |       |                       | 22            |
| OLIGOCHAETA<br>Nais                  | o             | •     | c                     |               |
|                                      | )             | •     | •                     |               |
| SPIROSPERMA                          | 0             | -     | 0                     |               |
| OTHER<br>ALL OLIGOCHAETA             | 344           | 456   | 322                   | 7741          |
| POLYCHAETA<br>Mannyunkia speciosa    | 33            | . 8   | 9                     | 1212          |
|                                      |               |       |                       | 1212          |
| CLADOCERA<br>Daphnia                 | -             | 0     | ò                     | ٢             |
| ALL CLADGERA                         |               |       |                       |               |
| COPEPODA                             | c             | o     | -                     |               |
|                                      | • (           | • (   | . ;                   |               |
| HARPACTICOIDA                        | NO.           | φ     | ဓ္က                   |               |
| MACROCYCLOPS                         | ო             | ĸ     | 6                     |               |
| ALL COPEPODA                         |               |       |                       | 365           |

| TRANSECT 11 STATION 2 (CONT'D)            |      |             |          |                         |      |
|---|------|-------------|----------|-------------------------|------|
| TAXON                                     | GRAE | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER | ETER |
| OSTRACODA                                 | -    | 7           | 60       | 76                      | i    |
| AMPHIPODA<br>GAMMARUS                     | 11   | ō           | =        | 262                     |      |
| ALL AMPHIPODA                             |      |             |          | 262                     |      |
| DIPTERA<br>CHIRONOMIDAE                   | 8    | 47          | 27       | 634                     |      |
| EPHEMEROPTERA<br>Ephemeridae<br>Hfxagfnia | 43   | 6           | 29       |                         |      |
| ALL EPHEMEROPTERA                         |      |             |          | 785                     |      |
| TRICHOPTERA<br>Leptoceridae<br>Oecetis    | 8    | ₩.          | 0        |                         |      |
| ALL TRICHOPTERA                           | ·    | •           | •        | 2 2                     |      |
| ACAKLINA                                  | י    | -           | -        | ;                       |      |
| GASTROPODA<br>AMNI COLA                   | -    | 0           | -        |                         |      |
| •   | -    | -           | 0        |                         |      |
| VALVATA TRICARINATA                       | •    | -           | 0        | 46                      |      |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM     | 66   | 62          | 90       |                         |      |
| SPHAERIUM                                 | -    | ស           | 6        |                         |      |
| ALL SPHAERIIDAE<br>ALL PELECYPODA         |      |             |          | 1336<br>1336            |      |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA                   | ATA  |           |         | 10/17/83      |
|---|------|-----------|---------|---------------|
| LAKE ST. CLAIR TRANSECT 11 STATION 3                    |      |           | a Trail | 100           |
| TAXON   |      | 2         | . e     | NO./SQ. METER |
| )<br>   | ,    | 0         | 0       | 7             |
| ALL CNIDARIA  |      |           |         | ۲             |
| RHABDOCOELA   | -    | 4         | 0       | 34            |
| TRICLADIDA  | 0    | 0         | -       | 7             |
| NEMATODA  | 208  | 193       | 173     | 3953          |
| MIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA ELONGATA<br> | М    | -         | m       | 84            |
| OLIGOCHAETA<br>Spirosperma                              | 21   | ٥         | ស្      |               |
| OTHER<br>ALL OLIGOCHAETA                                | 1123 | 1123 1123 | 131     | 20750         |
| MANAVUNKIA SPECIOSA                                     | 23   | 57        | 42      | 8 40<br>8 40  |
| CLADOCERA<br>DAPHNIA                                    | 8    | •         | ٥       | ·             |
| ILYOCRYPTUS   | 0    | •         | 8       |               |
| ALL CLADOCERA   |      |           |         | 34            |

| GRAB COUNTS  1. STATION 3 (CONT'D)  GRAB COUNTS  1. 1 1 1 1  1. LACUSTRIS  1. CO 10  1. CO 11  1 |  |     |              |            | 10/1//83                                |
|--|--|-----|--------------|------------|---|
| 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | 11 STATION 3                           | ;   |              | !          |   |
| LACUSTRIS  1 1 1 1 1  1 LACUSTRIS  1 COIDA  1 COIDA  1   | TAXON                                  | ¥ - | <b>AB</b> CO | S EN       | ESTIMATED<br>NO./SQ. METER              |
| LACUSTRIS  1 0 0  COIDA  COIDA | COPEPODA                               | ,   | -            | <br>       | 1 |
| 100 0 0 10 10 10 10 10 10 10 10 10 10 10   |  | -   | -            | -          |   |
| COLDA  COLDA  CODA  CODA  CODA  CODA  CODA  CODA  CODA  CODA  CODO  CODO | EPISHURA LACUSTRIS                     | -   | 0            | 0          |   |
| 10PS 10PS 10PS 10PS 10PS 10PS 10PS 10PS  | HARPACTICOIDA                          | 27  | 5            | 5          |   |
| DAE  PODA  19 41 10  PODA  DAE  RRA  A  RRA  A  BEROPTERA  O 1 0  10 1 0  AE  GT 128 78  H  PODA  10 0 5  H  PODA  10 0 1 0  10 0 5  H  PODA  11 0 0 5  H  PODA  IN O 0 5  IN O 0  | MACROCYCLOPS                           | ţ   | a            | •          |   |
| 19 41 10 10 41 10 10 41 10 10 41 10 10 41 10 10 41 10 10 41 10 10 41 10 10  | ALL COPEPODA                           | !   | •            | •          | Š                                       |
| DA<br>FULS<br>PHIPODA<br>OWIDAE<br>OWIDAE<br>CHIDAE<br>ENIDAE<br>ENIDAE<br>ENIDAE<br>CHOPTERA<br>ODA<br>TERA<br>ENIDAE<br>CHOPTERA<br>ODA<br>ODA<br>ODA<br>ODA<br>ODA<br>ODA<br>ODA<br>ODA<br>ODA<br>OD  | OSTRACODA                              | ~   | c            | c          | 3                                       |
| PODA  DAE  ERA  ARE  RECOPTERA  ARE  ARE  ARE  ARE  ARE  ARE  ARE  | * CC GG # T GG # T                     | 1   | •            | <b>)</b> . | !                                       |
| DAE  DAE  BERA  A  | GAIMARUS                               | 6   | 7            | 9          | 482                                     |
| ERA  ERA  A  A  EROPTERA  A  DAE  OPTERA  A  ERIIDAE  FERIDAE  O 0 5  FERIDAE  A  FERIDAE  A  A  A  A  A  A  A  A  A  A  A  A  | ALL AMPHIPODA                          |     |              |            | 482                                     |
| ERA  A   | DIPTERA<br>CHIRONOMIDAE                | 37  | 23           | 30         | 989                                     |
| A  | EPHEREROPTERA                          |     |              |            |   |
| AE  ERIDAE  0 0 1  0 1 0  1 0  1 0  1 0  1 0  1 0  | REVIEWER IDAE<br>HEXAGENIA<br>         | 46  | 53           | 47         |   |
| DAE  OPTERA  O 1 0 1 0  AE  AE  ERIIDAE  FRIDAE  199   | ALL EPHEMEROPTERA                      |     |              |            | 840                                     |
| OPTERA O 1 0 AE AE A O 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 5 0 0 5 0 0 5   | TRICHOPTERA<br>LEPTOCERIDAE<br>GECETIS | 0   | 0            | -          |   |
| AE  67 128 78  M  67 128 78  ERIIDAE  191  | ALL TRICHOPTERA                        |     |              |            | 7                                       |
| AE 67 128 78 m 0 0 5 - 128 18  | ACARINA                                | 0   | -            | 0          |   |
| AE   | PELECYPODA<br>Sphaeridae<br>Sphaeridae |     | Ş            | 1          |   |
| O O S  |  | ò   | 97.          | 9          |   |
| AE   | SPHAERIUM                              | 0   | 0            | N)         |   |
|  | ALL SPHAERIDAE                         |     |              |            | 1914                                    |

|   |   |               |             |          | 58/11/01                   |
|---|---|---------------|-------------|----------|----------------------------|
| LAKE ST. CLAIR                          | TRANSECT 12 STATION 1   | •             |             |          |                            |
| TAXON                                   |   | - GR          | GRAB COUNTS | NTS<br>B | ESTIMATED<br>NO./SQ. METER |
| TRICLADIDA                              | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 0             | -           | 0        | 7                          |
| NEMATODA                                | •   | ,<br><b>6</b> | t.          | 9        | 337                        |
| OLIGOCHAETA                             |   |               |             |          |                            |
| SPIROSPERMA                             |   | 8             | က           | 6        |                            |
| STYLARIA                                |   | -             | 0           | -        |                            |
| 1 |   |               | )           | •        |                            |
| OTHER<br>ALL OLIGOCHAETA                | ٠   | 22            | 24          | <b>0</b> | 516                        |
| POLYCHAETA<br>Manayunkia speciosa       | S.A.  | 22            | <b>5</b>    | 27       | 441                        |
| ALL POLYCHAETA                          | •   |               |             |          | 441                        |
| CLADOCERA                               |   | (             | •           | •        |                            |
|   |   | >             | -           | >        |                            |
| ILYOCRYPTUS                             |   | -             | 0           | 0        |                            |
| ALL CLADOCERA                           |   |               |             |          | <b>2</b>                   |
| COPEPODA                                |   |               |             |          |                            |
| CYCLOPOIDIDAE                           |   | -             | -           | 0        |                            |
| DIAPTOMUS                               |   | 0             | -           | -        |                            |
| HARPACTICOIDA                           |   | 52            | 6           | 2        |                            |
|   |   |               | !           |          |                            |
| ALL COPEPODA                            |   |               |             |          | 434                        |
| OSTRACODA                               |   | ō             | 4           | ō        | 165                        |
|   |   |               |             |          |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |     |             |      | 10/11/83                   |
|---|-----|-------------|------|----------------------------|
| TRANSECT 12 STATION 1 (CONT.D)            | į   | į           |      |                            |
| TAXON                                     | - 8 | GRAB COUNTS | N 60 | ESTIMATED<br>NO./SQ. METER |
| AMPHIPODA<br>GAMMARUS                     | 32  | 4           | 24   | 482                        |
| ALL AMPHIPODA                             |     |             |      | 482                        |
| DIPTERA<br>CHIRONOMIDAE                   | 35  | 24          | 59   | 909                        |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA | 126 | 129         | 84   |                            |
| ALL EPHEMEROPTERA                         |     |             |      | 2775                       |
| LEPTOCERIDAE OECETIS ALL TRICHOPTERA      | 1   | 6           | 4    | 96                         |
| ACARINA                                   | -   | 0           | 0    | •                          |
| GASTROPODA<br>AMPLICOLA                   | 4   | 4           | 8    |                            |
| ELIMIA LIVESCENS                          | 0   | 0           | -    |                            |
| GYRAULUS                                  | ID. | က           | 6    |                            |
| •   | 0   | -           | 0    |                            |
| ALL GASTROPOUA                            |     |             |      | 158                        |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM     | . 4 | 22          | 4    |                            |
| SPHAERIUM                                 | -   | 0           | 0    |                            |
| ALL SPHERIIDAE ALL CYPODA                 |     |             |      | 351<br>351                 |

|  |           |             |             | 58/11/01                   |
|--|-----------|-------------|-------------|----------------------------|
| LAKE ST. CLAIR TRANSECT 12 STATION 2                                 |           |             |             |                            |
| TAXON  | - 88      | 9<br>0<br>0 | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA  | 100       | -           | 0           | 41                         |
| TRICLADIDA   | -         | 0           | -           | 4                          |
| NEMATODA   | <b>10</b> | 24          | t.          | 640                        |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA ELONGATA<br>ALL HIRUDINEA | 0         | -           | ٥           | ۴                          |
| OLIGOCHAETA<br>Spinosperma   | -         | -           | 0           |                            |
| OTHER<br>ALL OLIGOCHAETA   | 171       | 159         | <b>6</b>    | 2968                       |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA                                    | 5         | 4           | Ŋ           | 152                        |
| ALL POLYCHAETA   |           |             |             | 152                        |
| CLADOCERA<br>DAPHNIA   | -         | 0           | 0           | _                          |
| ALL CLADOCERA  |           |             |             | ٠                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |     |             |     | 10/17/83                                |
|---|-----|-------------|-----|---|
| TRANSECT 12 STATION 2 (CONT'D)            | ć   | 9           |     |   |
| TAXON                                     | ¥ - | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER              |
| COPEPODA<br>CYCLOPS BICUSPIDATUS          | 6   | ٥           | -   | . 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 |
| DIAPTOMUS                                 | ო   | 0           | 0   |   |
| LACUS                                     |     | -           | 0   |   |
| HARPACTICOIDA                             | 16  | βD          | 4   |   |
| LIMNOCALANUS                              | 0   | -           | 0   |   |
| MACROCYCLOPS                              | 4   | 8           | 0   |   |
| MESOCYCLOPS                               | ო   | 0           | 0   |   |
| ALL COPEPODA                              |     |             |     | 310                                     |
| OSTRACODA                                 | 9   | 4           | 0   | 138                                     |
| AMPHIPODA<br>Gammarus                     | 524 | 8           | ø   | 3788                                    |
| ALL AMPHIPODA                             |     |             |     | 3788                                    |
| DIPTERA                                   | ္တ  | 32          | 24  | 730                                     |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA | 122 | 117         | 93  |   |
| ALL EPHEMEROPTERA                         |     |             |     | 2279                                    |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OECETIS    | Ć   | 6           | 8   |   |
| ALL TRICHOPTERA                           |     |             |     | 80<br>80                                |
| ACARINA                                   | -   | 0           | 0   | 7                                       |
|   |     |             |     |   |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA   |             |                                      |             | 10/17/83      |
|---|-------------|--------------------------------------|-------------|---------------|
| TRANSECT 12 STATION 2 (CONT'D)          | VQU         | STMICO MAGS                          | Z T         | ECTIMATED     |
|   | -           | 8                                    | 9 00        | NO./SO. METER |
| GASTROPODA                              | !<br>!<br>! | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 1<br>1<br>1 | )             |
| AMNICOLA                                | 0           | -                                    | 0           |               |
| * |             |                                      |             |               |
| GYRAULUS                                | ស           | 0                                    | 0           |               |
| 111111                                  |             |                                      |             |               |
| ALL GASTROPODA                          |             |                                      |             | <b>4</b>      |
| PELECYPODA                              |             |                                      |             |               |
| SPHAERIIDAE                             |             |                                      |             |               |
| PISIDIUM                                | 93          | 34                                   | <b>5</b> 6  |               |
|   |             |                                      |             |               |
| SPHAERIUM                               | 8           | 0                                    | 7           |               |
| 111111111111111111111111111111111111111 |             |                                      |             |               |
| ALL SPHAERIIDAE                         |             |                                      |             | 899           |
| ALL PELECYPODA                          |             |                                      |             | 899           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                               |     |        |             | 10/17/83                   |
|---|-----|--------|-------------|----------------------------|
| LAKE ST. CLAIR TRANSECT 12 STATION 3 TAXON                          | g - | AB CC  | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| TRICLADIDA  | 0   | 0      | -           | 7                          |
| NEMATODA  | ī.  | თ      | 5           | 269                        |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>HELOBDELLA ELONGATA<br>ALL HIRUDINEA | 6   | . 0    | -           | 2                          |
| OLIGOCHAETA<br>Spirosperma  | 0   | 0      | 8           |                            |
| OTHER<br>ALL OLIGOCHAETA  | 130 | 187    | 301         | 4270                       |
| POLYCHAETA MANAYUNKIA SPECIOSA                                      | 24  | e<br>G | 101         | 1267                       |
| CLADOCERA<br>BOSMINA  | 0   | 0      | -           |                            |
| DAPHNIA<br><br>ALL CLADOCERA  | •   | ო      | -           | 34                         |
| COPEPODA  | 0   | 0      | 4           |                            |
| HARPACTICOIDA   | 0   | m      | Ø           |                            |
| MACROCYCLOPSALL COPEPODA  | 0   | •      | -           | 124                        |
| OSTRACODA   | -   | -      | -           | 21                         |

|   |     |              |     | •                 |
|---|-----|--------------|-----|-------------------|
| TRANSECT 12 STATION 3 (CONT'D)                                | GRA | GRAB COLINTS | NT. | ESTIMATED         |
| TAXON   | -   | 7            | n m | NO./SQ. METER     |
| AMPHI PODA<br>GAMMARUS  |     | 6            |     | 241               |
| ALL AMPHIPODA   |     |              |     | 241               |
| DIPTERA<br>CHIRONOMIDAE                                       | 60  | 24           | 38  | 551               |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA<br>AL EPHEMEROPTERA | 81  | 6            | 19  | 1625              |
| LEPTOCERIDAE DECETIS ALL TRICHOPTERA                          | 4   | -            | 0   | 2                 |
| ACARINA   | -   | 0            | 8   | 21                |
| GASTROPODA  | -   | 8            | ო   |                   |
| GYRAULUS  | 0   | -            | 0   |                   |
| ALL GASTROPODA  |     |              |     |                   |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                         | . 4 | ທ            | 4   |                   |
| SPHAERIUM   | -   | -            | 0   |                   |
| ALL SPHAERIIDAE<br>ALL PELECYPODA                             |     |              |     | 4 4<br>4 4<br>8 8 |
|   |     |              |     |                   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |              |                      |      | 10/11/83                   |
|--|--------------|----------------------|------|----------------------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 1 TAXON | 8 -          | GRAB COUNTS<br>1 2 3 | JNTS | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                                | 7            | 0                    | 34   | 110                        |
| NEMATODA                                   | 11           | 56                   | 28   | 469                        |
| OLIGOCHAETA<br>Nais                        | ٥            | -                    | ō    |                            |
| SPIROSPERMA                                | 8            | -                    | ٥    |                            |
| OTHER<br>ALL OLIGOCHAETA                   | ø            | 4                    | •    | 59                         |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA          | <del>6</del> | 27                   | 11   | 427                        |
| ALL POLYCHAETA                             |              |                      |      | 427                        |
| COPEPODA<br>HARPACTICOIDA                  | -            | ស                    | 49   | 379                        |
| ALL COPEPODA                               |              |                      |      | 379                        |
| OSTRACODA                                  | -            | 6                    | ın   | 62                         |
| AMPHI PODA AMMARUS                         | 89           | 73                   | 72   | 1605                       |
| ALL AMPHIPODA                              |              |                      |      | 1605                       |
| DIPTERA<br>Chiromomidae                    | =            | 0                    | 27   | 55<br>53<br>58             |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA     |     |             |     | 10/17/83                              |
|---|-----|-------------|-----|---------------------------------------|
| TRANSECT 13 STATION 1 (CONT'D)            | ;   |             |     |                                       |
| TAXON                                     | ž – | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER            |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>Hexagenia | 99  | 158         | 52  | ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! |
| ALL EPHEMEROPTERA                         |     |             |     | 2300                                  |
| TRICHOPTERA<br>LEPTOCERIDAE<br>DECETIS    | -   | ო           | 5   |                                       |
| ALL TRICHOPTERA                           |     |             |     | 96                                    |
| ACARINA                                   | 0   | 0           | -   | 7                                     |
| GASTROPODA<br>Amnicola                    | =   | 4           | Ø   |                                       |
| ELIMIA LIVESCENS                          | •   | 0           | m   |                                       |
| GYRAULUS                                  | · თ |             | 4   |                                       |
| VALVATA TRICARINATA                       | 4   | 4           |     |                                       |
| ALL GASTROPODA                            |     |             |     | 510                                   |
| PELECYPODA                                |     |             |     |                                       |
| SPHAERIIDAE<br>PISIDIUM                   | _   | Ø           | g   |                                       |
| SPHAERIUM                                 | ~   | •           | e   |                                       |
| ALL SPHAERITOAE                           | ľ   | •           | ,   | 241                                   |
| UNIONIDAE<br>ALL PELECYPODA               | -   | 0           | 0   | 248                                   |
|   |     |             |     |                                       |

| MACAGE COOK INDS TOTAL GRAD COOK DATA |     |       |           | 58//1/01      |
|---------------------------------------|-----|-------|-----------|---------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 2  | ć   | Š     |           |               |
| TAXON                                 | ¥   | 4 2 3 | 20        | NO./SQ. METER |
| RHABDOCOELA                           | -   | 0     | -         | 41            |
| NEMATODA                              | 25  | 42    | 0         | 530           |
| OLIGOCHAETA                           | 160 | 152   | 9         | 2562          |
| POLYCHAETA MANAYUNKIA SPECIOSA        | 4   | 4     | <b>co</b> | 179           |
| CLADDCERA<br>BOSMINA                  | 0   | -     | 0         |               |
| ALL CLADOCERA                         |     |       |           | 7             |
| COPEPODA<br>DIAPTOMUS                 | 0   | +     | 0         |               |
| HARPACTICOIDA                         | 4   | 34    | -         |               |
| MACROCYCLOPS                          | 0   | a     | •         |               |
| ALL COPEPODA                          |     |       |           | 365           |
| OSTRACODA                             | 6   | 16    | 0         | 131           |
| AMPHI PODA<br>Gammarus                | 20  | 9     | 9         | 909           |
| ALL AMPHIPODA                         |     |       |           | 909           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA                           |     |          |     | 10/17/83                   |
|---|-----|----------|-----|----------------------------|
| TRANSECT 13 STATION 2 (CONT'D)                                  | (   |          | ļ   |                            |
| TAXON   | ž – | 4 2 3    | 200 | ESTIMATED<br>NO./SQ. METER |
| DIPTERA<br>CHIRONOMIDAE   | 04  | 42       | 34  | 799                        |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA<br>AALL EPHEMEROPTERA | 92  | 8        | 06  | 1942                       |
| TRICHOPTERA<br>LEPTOCERIDAE<br>GECETIS                          | -   | 8        | 8   |                            |
| ALL TRICHOPTERA   |     |          |     | 34                         |
| ACARINA   | -   | 0        | -   | 14                         |
| GASTROPODA<br>Amnicola  | ო   | ო        | 8   |                            |
| GYRAULUS  | 0   | -        | -   |                            |
| ALL GASTROPODA  |     |          |     | 69                         |
| PELECYPODA<br>Sphaeridae  |     |          |     |                            |
| PISIDIUM  | 52  | 44       | 16  |                            |
| SPHAERIUM   | 6   | <b>S</b> | 7   |                            |
| ALL SPHAERIIDAE<br>ALL PELECYPODA                               |     |          |     | 654<br>654                 |

1

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                                 |     |       |             | 10/17/83                   |
|---|-----|-------|-------------|----------------------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 3 TAXON                            | g - | AB CO | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| PORIFERA<br>SPONGILLA   | 0   | +     | 0           | +                          |
| ALL PORIFERA  |     |       |             | 0                          |
| NEMATODA  | 12  | 23    | 6           | 372                        |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA STAGMALIS<br>ALL HIRUDINEA | -   | •     | 0           |                            |
| OLIGOCHAETA<br>Spirosperma  | 7   | -     | 0           |                            |
| OTHER<br>ALL OLIGOCHAETA  | 147 | 164   | 103         | 2872                       |
|   | 4   | 28    | 11          | 413                        |
| ALL POLYCHAETA  |     |       |             | 413                        |
| CLADOCERA   | -   | 0     | 0           |                            |
| ATATAO  | -   | 0     | •           |                            |
| ALL CLADOCERA   |     |       |             | 4                          |
| A LACUS   | п   | 0     | 0           |                            |
| HARPACTICOIDA   | 7   | 4     | 0           |                            |
| MACROCYCLOPS  | 0   | 0     | 8           |                            |
| ALL COPEDDA   |     |       |             | 69                         |
| OSTRACODA   | 8   | ~     | 6           | 88                         |

| MACKUZUUBENIHUS PUNAK GRAB CUUNT DATA                     |              |             |           | 10/11/83                   |
|---|--------------|-------------|-----------|----------------------------|
| TRANSECT 13 STATION 3 (CONT'D)                            |              |             |           |                            |
| TAXON   | æ -          | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| AMPHI PODA<br>Gammarus                                    | 6            | 13          | 8         | 289                        |
| ALL AMPHIPODA   |              |             |           | 289                        |
| DIPTERA<br>CHIRONOMIDAE                                   | <b>78</b>    | 52          | 32        | 171                        |
|   | 83           | Ξ           | 101       |                            |
| ALL EPHEMEROPTERA   |              |             |           | 2073                       |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OECETIS<br>ALL TRICHOPTERA | 6            | -           | ო         | 4                          |
| ACARINA   | <del>-</del> | -           | -         | 21                         |
| GASTROPODA<br>AMNICOLA                                    | 0            | -           | 6         |                            |
| GYRAULUS  | -            | -           | 8         |                            |
| VALVATA TRICARINATA                                       | 0            | 0           | -         |                            |
| ALL GASTROPODA  |              |             |           | 62                         |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                     | 28           | 73          | 6         |                            |
| SPHAERIUM   | 0            | 8           | 8         |                            |
| ALL SPHAERIDAE  |              |             |           | 80 e<br>RU A               |
| ALL FELEVITODA  |              |             |           | <b>1</b> 00                |

| MACKUZUUBENTHOS PONAR GRAB COUNT DATA |          |             |          | 10/17/83                   |
|---------------------------------------|----------|-------------|----------|----------------------------|
| DETROIT RIVER TRANSECT 14 STATION 1   |          |             |          |                            |
|                                       | GRA<br>- | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>Hydra                     | - 6      | 80          | 0        | 186                        |
| ALL CNIDARIA                          |          |             |          | 186                        |
| RHABDOCOELA                           | 27       | 5           | 7        | 337                        |
| NEMERTINEA                            | 25       | а           | 7        | 234                        |
| NEMATODA                              | 8        | -           | 0        | 21                         |
| OLIGOCHAETA<br>SPIROSPERMA            | 0        | -           | 0        |                            |
| OTMER<br>ALL OLIGOCHAETA              | 13       | ស           | 50       | 269                        |
| MANAVUNKIA SPECIOSA                   | ~        | 0           | 0        | 7                          |
| ALL POLYCHAETA                        |          |             |          | 7                          |
| CLADOCERA<br>BOSMINA                  | •        | -           | ٥        | ٠                          |
| ALL CLADOCERA                         |          |             |          |                            |
| AMPHIPODA<br>GAMMARUS<br>             | 4        | 0           | 0        |                            |
|                                       | €0       | 4           | 0        |                            |
| ALL AMPHIPODA                         |          |             |          | . 011                      |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |          |             |                | 10/17/83                   | 33          |
|--|----------|-------------|----------------|----------------------------|-------------|
| TRANSECT 14 STATION 1 (CONT'D)             |          |             |                |                            |             |
| TAXON                                      | GRA<br>- | GRAB COUNTS | JNTS<br>3      | ESTIMATED<br>NO./SQ. METER | ED<br>AETER |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE | 0        | - 4         | 0.             |                            |             |
| ALL DIPTERA                                | 3        | C)          | -              | 758                        |             |
| EPHEMEROPTERA                              |          |             |                |                            |             |
| EPHEREXIDAE<br>Hexagenta                   | ¢        | (           | (              |                            |             |
|  | N        | >           | 0              |                            |             |
| ALL EPHEMEROPTERA                          |          |             |                | 4                          |             |
| TRICHOPTERA                                |          |             |                |                            |             |
| HYDROPSYCHIDAE                             |          |             |                |                            |             |
| CHEUMATOPSYCHE                             | 25       | Ξ           | 0              |                            |             |
| HYDROPSYCHE                                | 04       | 28          | 4              |                            |             |
| ALL TRICHOPTERA                            | l<br>·   |             | •              | •                          |             |
|  |          |             |                | *                          |             |
| ACARINA                                    | g        | 8           | -              | 62                         |             |
| GASTROPODA                                 |          |             |                |                            |             |
| AMNICOLA                                   | -        | 0           | 0              |                            |             |
| ELIMIA LIVESCENS                           | 32       | 9           | 30             |                            |             |
| FERISSIA                                   | u        | •           | •              |                            |             |
|  | ,        | t           | >              |                            |             |
| GYRAULUS                                   | 4        | ED.         | 0              |                            |             |
| PHYSA                                      | . 4      | 12          | 0              |                            |             |
|  |          | !           | •              |                            |             |
| ALL GASTACTOR                              |          |             |                | 778                        |             |
| PELECYPODA                                 |          |             |                |                            |             |
| SPHAERIIDAE                                |          |             |                |                            |             |
| PISIDIO                                    | 4 4      | 25          | <del>1</del> 3 |                            |             |
| SPHAERIUM                                  | 4        | 6           | 8              |                            |             |
| 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0    |          |             |                |                            |             |
| ALL SPHAERIIDAE                            | •        | •           |                | 899                        |             |
| ALL PELECYPODA                             | -        | >           | -              | 683                        |             |
|  |          |             |                | <b>!</b>                   |             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |      |             |          | 10/11/83      |
|---|------|-------------|----------|---------------|
| DETROIT RIVER TRANSECT 14 STATION 2       | GRAB | GRAB COUNTS | STS      |               |
| TAXON                                     | - 1  | 8           | 6        | NO./SQ. METER |
| ŀ   | -    | 0           | 0        | 7             |
| ALL CNIDARIA                              |      |             |          | 7             |
| TRICLADIDA                                | •    | ო           | ø        | 8             |
| NEMERT INEA                               | Ξ    | 4           | EO.      | 138           |
| NEMATODA                                  | 0    | 4           | 6        | 8             |
| OLIGOCHAETA                               | 20   | 6           | <b>‡</b> | 365           |
| POLYCHAETA MANAYUMKIA SPECIOSA            | -    | 8           | 0        | 2 2           |
| COPEPODA<br>DIAPTOMUS<br><br>ALL COPEPODA | ٥    | 0           | -        | r r           |
| DIPTERA<br>CHIRONDMIDAE                   | -    | 8           | 0        | 21            |
| EPHEMEROPTERA<br>Baetiscidae<br>Baetisca  | 4    | 0           | 0        |               |
| ALL EPHEMEROPTERA                         |      |             |          | 28            |

| 10/11/83                              |  |
|---------------------------------------|--|
|                                       |  |
| ITA                                   |  |
| COUNT DA                              |  |
| GRAB                                  |  |
| PONAR                                 |  |
| MACROZOOBENTHOS PONAR GRAB COUNT DATA |  |

|   | -  | 5 ~<br>9 | GKAB COUNTS | ESTIMATED NO./SQ. METER |
|---|----|----------|-------------|-------------------------|
| ACARINA                                 | -  | -        | -           | 21                      |
| GASTROPODA                              |    |          |             |                         |
|   | 8  | 0        | 8           |                         |
| ELIMIA LIVESCENS                        | 12 | e        | c           |                         |
| 3 3 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | •  | ,        | ,           |                         |
| GYRAULUS                                | 0  | -        | 0           |                         |
| PHYSA                                   | •  | c        | c           |                         |
|   | •  | •        | >           |                         |
| ALL GASTROPODA                          |    |          |             | 165                     |
| PELECYPODA                              |    |          |             |                         |
| SPHAERIIDAE                             |    |          |             |                         |
| PISIDIUM                                | 11 | ·        | ٢           |                         |
| • | •  | 4        | •           |                         |
| SPHAERIUM                               | •  | c        | c           |                         |
| 111111111111111111111111111111111111111 | -  | >        | ,           |                         |
| ALL SPHAERIIDAE                         |    |          |             |                         |
| ALL PELECYPODA                          |    |          |             | 207                     |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA      |          |             |     | 10/17/83       |
|--|----------|-------------|-----|----------------|
| DETROIT RIVER TRANSECT 14 STATION 3        | GRAB     | GRAB COUNTS | S.E | ESTIMATED      |
| 2  | -        | 7           | 6   | NO./SQ. METER  |
| CNIDARIA<br>HYDRA                          | 0        | -           | 0   |                |
| ALL CNIDARIA                               |          |             |     | 1              |
| RHABDOCOELA                                | 0        | -           | 0   |                |
| TRICLADIDA                                 | 0        | -           | 0   | •              |
| NEMERTINEA                                 | •        | 00          | 7   | 138            |
| NEMATODA                                   | -        | -           | 8   | <b>58</b>      |
| OL IGOCHAETA<br>Branchiura                 | -        | ٥           | 9   |                |
| NAIS                                       | -        | 0           | 0   |                |
| SPIROSPERMA                                | <b>0</b> | <b>o</b>    | 8   |                |
| OTHER<br>ALL OLIGOCHAETA                   | 9        | 62          | 9   | 1350           |
| POLYCHAETA MANAYUMKIA SPECIOSA             | a        | 4           | 8   | 10 10<br>10 10 |
| AMPHIPODA<br>GAMMARUS<br><br>ALL AMPHIPODA | •        | •           | -   |                |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA               |           |             |          | 10/17/83                   |
|---|-----------|-------------|----------|----------------------------|
| TRANSECT 14 STATION 3 (CONT'D) TAXON                | GRAB<br>1 | GRAB COUNTS | NTS<br>B | ESTIMATED<br>NO./SQ. METER |
| TERRESTRIAL INSECT                                  | 7         | 0           | ٥        | 14                         |
| DIPTERA<br>CHIRONOMIDAE                             | •         | ~           | 6        | 124                        |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE<br> | •         | 8           | ۰        | 7                          |
| ACARINA   | 0         | 0           | 8        | <b>4</b>                   |
| GASTROPODA<br>AMNICOLA                              | -         | . •         | ~        |                            |
| ELIMIA LIVESCENS                                    | ∞         | ō           | =        | 213                        |
| PELECYPODA<br>SPHAERIDAE<br>PISIDIUM                | 5         | •           | 5        |                            |
| SPHAERIUM   | ო         | -           | -        |                            |
| ALL SPHAERIIDAE<br>Unionidae<br>Elliptio dilatatus  | 0         | -           | 0        |                            |
| ALL PELECYPODA                                      | •         |             |          | 234                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | RAB COUNT DATA        |          |                  |      | 10/18/83      |
|---------------------------------------|-----------------------|----------|------------------|------|---------------|
| DETROIT RIVER TRAN                    | TRANSECT 15 STATION 1 | GDAB     | STAINTS REGISTER | NT V | ESTIMATED     |
| TAXON                                 |                       | -        | 7                | 9    | NO./SO. METER |
| CNIDARIA<br>HYDRA                     |                       | æ        | 26               | 1.0  |               |
| ALL CNIDARIA                          |                       |          |                  |      | 192           |
| RHABDOCOELA                           |                       | 5        | 0                | 0    | 69            |
| TRICLADIDA                            |                       | 24       | 80               | 4    | 820           |
| NESERTINEA                            |                       | 12       | 73               | 21   | 730           |
| NEMATODA                              |                       | ō        | 80               | 4    | 186           |
| OLIGOCHAETA<br>SPIROSPERMA            |                       | 8        | 9                | 28   |               |
| STYLARIA                              |                       | -        | 0                | 0    |               |
| OTHER<br>ALL OLIGOCHAETA              |                       | <b>4</b> | -                | 6    | 903           |
| POLYCHAETA<br>Manayunkia speciosa     |                       | 23       | 11               | =    | 351           |
| ALL POLYCHAETA                        |                       |          |                  |      | 351           |
| OSTRACOOA                             |                       | 0        | 0                | -    | 7             |

|   |                |              |        | 69 /91 /01                 |
|---|----------------|--------------|--------|----------------------------|
| TRANSECT 15 STATION 1 (CONT'D)          | ;              |              |        |                            |
| TAXON                                   | <del>2</del> – | GRAB COUNTS  | S E    | ESTIMATED<br>NO./SQ. METER |
| GAMMARUS                                | 3              | ,            |        |                            |
|   | !              | 4            | 2      |                            |
| PONTOPOREIA HOYI                        | 0              | 0            | -      |                            |
| ALL AMPHIPODA                           |                |              |        | 496                        |
| DIPTERA                                 |                |              |        |                            |
| CHIRONOMIDAE                            | 287            | 256          | 575    | 7699                       |
| EPHEMEROPTERA                           |                |              |        |                            |
| CAENIDAE                                | 1              | •            |        |                            |
|   | -              | 0            | 4      |                            |
| EPHEMERIDAE                             |                |              |        |                            |
| HEXAGENIA                               | 7              | 0            | -      |                            |
|   |                |              |        |                            |
| EPHEMERELLA                             | 0              | 4            | 0      |                            |
|   | •              | •            | ,      |                            |
| BAETISCIDAE                             |                |              |        |                            |
| BAETISCA                                | ₹              | -            | a      |                            |
| ALL EPHEMEROPTERA                       |                |              |        | 172                        |
| TRICHOPTERA                             |                |              |        |                            |
| BRACHYCENTRIDAE                         | •              | c            | c      |                            |
|   | -              | •            | >      |                            |
| HYDROPSYCHIDAE                          |                |              |        |                            |
| CHEUMATOPSYCHE                          | 10             | <del>0</del> | 92     |                            |
| HUNDOUNT                                | 0              | q            | Ç      |                            |
|   | 0              | 2            | D<br>D |                            |
| LEPTOCERIDAE                            |                |              |        |                            |
| CERACLEA                                | 0              | <b>-</b>     | -      |                            |
| 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | •              | •            | •      |                            |
| 1112                                    | -              | n            | 7      |                            |
| SETODES                                 | 0              | 8            | 0      |                            |
| 1 1 1 5 5 1                             |                |              |        |                            |
| ALL TRICHOPTERA                         |                |              |        | 3884                       |
| ACARINA                                 | -              | 0            | 8      | 21                         |
|   |                | ı            | i      |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |      |       |             | 10/18/83  |
|---|------|-------|-------------|---|
| TRANSECT 15 STATION 1 (CONT'D)          | č    | ğ     |             |   |
| TAXON                                   | Š –  | 1 2 3 | 0 E         | NO./SQ. METER                                       |
| GASTROPODA                              | <br> |       | ,<br>;<br>; | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| AMNICOLA                                | 22   | 23    | 16          |   |
| ALINE STATES                            | -    | 0     | 0           |   |
|   |      | ,     |             |   |
| ELIMIA LIVESCENS                        | 9    | 54    | 4 -         |   |
| GYRAULUS                                | *    | 4     | -           |   |
|   |      |       |             |   |
| PHYSA                                   | 0    | -     | 0           |   |
| • |      |       |             |   |
| ALL GASTROPODA                          |      |       |             | 1584  |
| PELECYPODA                              |      |       |             |   |
| SPHAERIIDAE                             |      |       |             |   |
| PISIDIUM                                | 69   | 54    | 36          |   |
|   | •    | !     | •           |   |
| SPHAERIUM                               | 4    | 9     | -           |   |
| ALL SPHAERIIDAE                         |      |       |             | 1240  |
| UNIONIDAE                               |      |       |             |   |
| 'n                                      | 0    | -     | 0           |   |
| OTHER                                   | -    | 0     | 0           |   |
| ALL PELECYPODA                          |      |       |             | 1253  |

| MACROZOUBENTHUS PUNAR GRAB COUNT DATA |      |             |          | 10/18/83      |
|---------------------------------------|------|-------------|----------|---------------|
| DETROIT RIVER TRANSECT 15 STATION 2   | 9400 | SOAD COUNTS | 5        | Catemates     |
| TAXON                                 | -    | 3 ~         | 0.00     | NO./SQ. METER |
| CNIDARIA<br>Hydra                     | •    | 4           | <b>5</b> | 207           |
| ALL CNIDARIA                          |      |             |          | 207           |
| RHABDOCOELA                           | 4    | 0           | и        | -4            |
| NEMERTINEA                            | 4    | o           | מו       | 124           |
| NEMATODA                              | 41   | 20          | 46       | 985           |
| OLIGOCHAETA<br>Spirosperma            | 0    | -           | 0        |               |
| OTHER<br>ALL OLIGOCHAETA              | ស    | 9           | ស        | 117           |
| POLYCHAETA MANAYUNKIA SPECIOSA        | 0    | ē.          | 4        | £3.           |
| COPEPODA<br>HARPACTICOIDA             | 0    | ٥           | -        | ;             |
| ALL COPEPODA                          |      |             |          | 7             |
| OSTRACODA                             | 0    | 0           | 4        | 78            |

| GRAB COUNTS<br>12 15 8<br>1 0 0<br>173 290 381<br>3 18 9<br>2 1 0<br>2 1 0<br>28 32 38<br>47 20 30<br>5 4 1<br>4 0 1   |   |          |     |     |               |
|--|---|----------|-----|-----|---------------|
| FERA  ERA  ERA  12 15 8  1 0 0  1 0 0 0  1 0 0 0 | TRANSECT 15 STATION 2 (CONT'D)                  | ď        | 20  | ATM | CSTIMATED     |
| 12 15 8  PTERA  AE  CHE  TERA  ERA  2 1 0  2 1 0  SCENS  SCENS  28 32 38  DA  10AE  4 0 1  |   | -        | 5   | 9   | NO./SQ. METER |
| THODES  THODES  EROPTERA  A HIDAE  HIDAE  PSYCHE  OPTERA  OPTERA  A  A  A  A  A  A  A  A  A  A  A  A   |   | 12       | 2   | 80  |               |
| EROPTERA  A HIDAE HIDAE PSYCHE TO THE  OPTERA  OPTERA  A F  ERIIDAE  TYPODA  A F  TYPODA  TYPODA  A F  TYPODA | AMETROPIDAE<br>TRICHORYTHODES                   | -        | 0   | 0   |               |
| HIDAE PSYCHE PSYCH PSYCHE PSYCH PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCH PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCHE PSYCH PSYCHE PSYCH P | ALL EPHEMEROPTERA                               |          |     |     | 248           |
| CHE  CHE  CHE  CHE  CHE  CHE  CHE  CHE   | TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | 173      | 290 | 381 |               |
| DPOTERA  2 1 0  1VESCENS  DPODA  AE  AE  AT 20 30  M  TYPODA  TYPODA   | HYDROPSYCHE                                     | <b>6</b> | 18  | o   |               |
| 1 VESCENS 1 VESCENS 28 32 38 20 000000 0000000000000000000000000000  | ALL TRICHOPTERA                                 |          |     |     | 6019          |
| 1 VESCENS 28 32 38 OPODA OPODA AE AE ERIIDAE A O 1   | GASTROPODA<br>Amnicola                          | 8        | -   | 0   |               |
| DPODA  AE  47 20 30  M  ERIIDAE  4 0 1   | ELIMIA LIVESCENS                                | 28       | 32  | 38  |               |
| AE   | ALL GASTROPODA                                  |          |     |     | 969           |
| 47 20 30<br>1IDAE 5 4 1<br>00A   | PELECYPODA                                      |          |     |     |               |
| F 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | PISIDIUM  | 47       | 8   | 30  |               |
| ERIIDAE 4 0 1  | SPHAERIUM                                       | ស        | 4   | -   |               |
|  | ALL SPHAERIIDAE<br>UNIONIDAE<br>ALL PELECYPODA  | 4        | 0   | -   | 737           |

| THE PROPERTY OF THE COURT OF TH |     |             |          | 69/91/01      |
|--|-----|-------------|----------|---------------|
| DETROIT RIVER TRANSECT 15 STATION 3  | 725 | GRAB COUNTS | STNI     | ESTIMATED     |
| TAXON  | -   | 7           | E        | NO./SQ. METER |
| CNIDARIA<br>Hydra  | ∞   | -           | -        | 69            |
| ALL CNIDARIA   |     |             |          | 69            |
| NEMERTINEA   | 36  | 9           | 6        | 510           |
| NEMATODA   | 8   | 36          | 52       | 943           |
| OLIGOCHAETA<br>Spirosperma   | ĸ   | 4           | φ        |               |
| OTHER<br>ALL OLIGOCHAETA   | 6   | 5           | <b>4</b> | 909           |
| POLYCHAETA MANAYUNKIA SPECIOSA   | φ   | <b>æ</b>    | 9        | 578<br>578    |
| DIPTERA<br>CHIRONOMIDAE  | -   | 4           | 4        | 62            |
| EPHEMEROPTERA<br>BAETISCIDAE<br>BAETISCA   | 7   | ო           | ß        |               |
| ALL EPHEMEROPTERA  |     |             |          | . 69          |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE  | . 6 | 0           | 5        |               |
| HYDROPSYCHE  | ID. | 0           | 0        |               |
| ALL TRICHOPTERA  |     |             |          | 875           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA        |      |             | 10/18/83                       |
|--|------|-------------|--------------------------------|
| TRANSECT 15 STATION 3 (CONT'D) TAXON         | GRAB | GRAB COUNTS | S ESTIMATED<br>3 NO./SQ. METER |
| GASTROPODA<br>GASTROPODA<br>ELIMIA LIVESCENS | 4    | 0           |                                |
| ALL GASTROPODA                               |      |             | <b>78</b>                      |
| PELECYPODA<br>SPHAERI IDAE                   | 4    | 60          | 20 358                         |
| UNIONIDAE                                    | -    | 0           | 1 372                          |

| MACROZODBENTHOS PONAR GRAB COUNT DATA      |      |             |     | 10/18/83      |
|--|------|-------------|-----|---------------|
| DETROIT RIVER TRANSECT 16 STATION 1        | GRAE | GRAB COUNTS | NTS | ESTIMATED     |
| TAXON                                      | -    | اً; ۲       | e   | NO./SO. METER |
| CNIDARIA                                   | ო    | 33          | 0   | 248           |
| ALL CNIDARIA                               |      |             |     | 248           |
| RHABDOCOELA                                | 96   | 9           | 67  | 1164          |
| TRICLADIDA                                 | 0    | -           | 41  | 331           |
| NEMERTINEA                                 | -    | 0           | 0   | 7             |
| NEMATODA                                   | 94   | o           | 35  | 950           |
| HIRUDINEA<br>ERPOBDELLIDAE                 | -    | 0           | 0   |               |
| GLOSSIPHONIDAE<br>GLOSSIPHONIA HETEROCLITA | 8    | 0           | 8   |               |
| ; —  | 8    | 0           | 0   |               |
|  | 8    | 0           | 0   |               |
| HELOBDELLA TRISERIALIS                     | 9    | 0           | ٥   |               |
| PISCICOLIDAE                               | 0    | -           | 0   |               |
| ALL HIRUDINEA                              |      |             |     | 110           |

B-297

3

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |             |             | 10/18/83                   |
|---|------------|-------------|-------------|----------------------------|
| TRANSECT 16 STATION 1 (CONT'D)          | ;          |             |             |                            |
|   | <b>6</b> + | GRAB COUNTS | STNU<br>3   | ESTIMATED<br>NO./SQ. METER |
| AETA                                    |            | !<br>!      | !<br>!<br>! | 1                          |
| CIVA                                    | 0          | 0           | 9           |                            |
| SPIROSPERMA                             | 7          | 23          | -           |                            |
| STYLARIA                                | 133        | 13          | 168         |                            |
| OTHER<br>ALL OLIGOCHAETA                | 296        | 161         | 174         | 6728                       |
|   | 0          | •           | 0           |                            |
| ALL POLYCHAETA                          |            |             |             | 1                          |
| CLADOCERA                               | C          | ¢           | (           |                            |
| 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - | >          | 7           | >           |                            |
| SIDA CRYSTALLINA                        | 7          | 0           | 0           |                            |
| -                                       |            |             |             | 34                         |
| OSTRACODA                               | m          | 0           | 0           | 21                         |
| AMPHIPODA                               |            |             |             |                            |
| GAMMARUS                                | 4          | 80          | 101         |                            |
| HYALELLA AZTECA                         | 66         | -           | 9           |                            |
| ALL AMPHIPODA                           |            |             |             | 2348                       |
| ISOPODA                                 |            |             |             |                            |
| ASELLUS                                 | e          | 0           | :           | 96                         |
| ALL ISOPODA                             |            |             |             | 96                         |
| DIPTERA                                 | •          | •           | •           |                            |
| CERA LUPUGUNIDAE<br>CHIRONOMIDAE        | 365        | 254         | 436         | 7265                       |
| ALL DIPTERA                             |            |             |             | 7348                       |

| 10/18/83              |                     |
|-----------------------|---------------------|
| r DATA                |                     |
| PONAR GRAB COUNT DATA | 1 (CONT'D)          |
| THOS PONAR G          | STATION 1 (         |
| MACROZOOBENTHOS       | TRANSECT 16 STATION |

| THE STATION 1 (CONT.O.)                         | i  | į           |     |                         |              |
|---|--|-------------|-----|-------------------------|--------------|
|   | 4¥5 ←  | GKAB COUNTS | S E | ESTIMATED<br>NO./SQ. ME | reo<br>Meter |
| EPHEMEROPTERA                                   | 6<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |             |     | <br>                    | 1            |
| CAENIS  | -  | m           | 12  |                         |              |
| EPHEMERIDAE<br>HEXAGENIA                        | c  | ā           | c   |                         |              |
| ALL EPHEMEROPTERA                               | •  | 5           | •   | 778                     |              |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | 0  | 8           | 0   |                         |              |
| LEPTOCERIDAE<br>OECETIS<br><br>ALL TRICHOPTERA  | o  | 8           | 9   | 138                     |              |
| ACARINA   | ٥  | 9           | 8   | 6                       |              |
| GASTROPODA AMVICOLA                             | . 2  | 46          | 6   |                         |              |
| FERISSIA  | 0  | 0           | -   |                         |              |
| GATALLES  | 8  | 0           | 4   |                         |              |
| PHYSA   | 22   | ო           | ĸ   | ٠                       |              |
|   | Ö  | 0           | -   |                         |              |
| 1   | 0  | -           | 0   |                         |              |
| ALL GASTROPODA                                  |  |             |     | 716                     |              |
| PELECYPODA<br>SPHAERIIOAE<br>PISIDIUM           | o  | 9           | o   | 300                     |              |
| \$ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1        | 1  | )           | ř   |                         |              |
| UNIONIDAE<br>ALL PELECYPODA                     | 0  | -           | 0   | 207                     |              |
|   |  |             |     |                         |              |

B-299

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |              |              |      | 10/18/83      |
|---------------------------------------|--------------|--------------|------|---------------|
| DETROIT RIVER TRANSECT 16 STATION 2   | d            | STALLON BAGS | 244  | CATABLE       |
| TAXON                                 | <b>5</b> –   | 5<br>N       | n 60 | NO./SQ. METER |
| CNIDARIA<br>Hydra                     | 60           | -            | 162  | 1178          |
| ALL CNIDARIA                          |              |              |      | 1178          |
| RHABDOCOELA                           | 56           | 4            | 88   | 813           |
| NEMERTINEA                            | <del>L</del> | 0            | 42   | 393           |
| TREMATODA                             | -            | 0            | 0    | 7             |
| NEMATODA                              | 125          | 47           | 6    | 1315          |
| EA<br>ELLIDA<br>DELLA                 | 0            | 0            | 4    |               |
| OTHER                                 | 0            | 0            | -    |               |
| GLOSSIPHONIDAE HELOBDELLA TRISERIALIS | 7            | 0            | •    |               |
| ALL HIRUDINEA                         |              |              |      | 89            |
| OL I GOCHAETA<br>SPIROSPERMA          | 6            | 0            | 9    |               |
| STYLARIA                              | a            | 5            | ED.  |               |
| OTHER                                 | 167          | 199          | 36   |               |
| ALL OF TOOCHARTA                      |              |              |      | 2223          |

| # STATION 2 (CONT'D)  GRAB COUNTS  1 2 3  A KIA SPECIOSA  HIA O  CHAETA  CHAETA  BICUSPIDATUS  BICUSPIDATUS  CLOPS  A AZTECA  13 6 11  | MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |     |          | 10/18/83                |
|--|---------------------------------------|-----------|-----|----------|-------------------------|
| #IA SPECIOSA  WIA SPECIOSA  CHAETA  CHAETA  CHAETA  OCERA  BICUSPIDATUS  CLOPS  CLOPS  A AZTECA  H 4 0  1 11  O 1 11  O 0 1  O 0 1  O 0 2  ICOIDA  FGDA  1 1 0 0  TABLE COUNTS  O 0 2  TO 0 4  | TRANSECT 16 STATION 2 (CONT'D)        | 1         | į   | !        |                         |
| MIA SPECIOSA  WIA SPECIOSA  CHAETA  CHAETA  CHAETA  CHAETA  CHAETA  OCERA  BICUSPIDATUS  OCERA  BICUSPIDATUS  OCERA  OCER |                                       | GRAB<br>- |     | NTS<br>3 | ESTIMATED NO./SQ. METER |
| CHAETA  CHAETA  CHAETA  VSTALLINA  OCERA  OCERA  BICUSPIDATUS  O 0 2  COIDA  ICOIDA  I | ₹                                     | -         | į į |          |                         |
| A  |                                       | •         | ,   | •        | 5                       |
| ### ##################################   | ALL POLYCHAETA                        | ٠         |     |          | 34                      |
| ### ##################################   | CLADOCERA                             | (         | ,   | !        |                         |
| ### ##################################   |                                       | 0         | 0   | 9        |                         |
| #STALLINA OCERA OCERA BICUSPIDATUS OCERA  BICUSPIDATUS O 0 2 OCERA OCORA ICOLOPS OCORA IT 8 1 | BOSMINA                               | ٥         | ٥   | -        |                         |
| #STALLINA OCERA OCERA BICUSPIDATUS  US CLOPS FGDA  A AZTECA  13 6 11   | DAPPELLA                              | c         | -   | =        |                         |
| ### AZTECA 13 6 11   |                                       | •         |     | :        |                         |
| BICUSPIDATUS 0 0 2 US 0 0 1 US 0 0 0 0 1 US 0 0 0 0 1 US 0 0 0 0 0 1 US 0 0 0 0 0 0 1 US 0 0 0 0 0 0 0 1 US 0 0 0 0 0 0 0 0 1 US 0 0 0 0 0 0 0 0 0 1 US 0 0 0 0 0 0 0 0 0 0 0 0 1 US 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 US 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | SIDA CRYSTALLINA                      | 0         | -   | 0        |                         |
| BICUSPIDATUS 0 0 2 US ICOIDA I | ALL CLADOCERA                         |           |     |          | 207                     |
| #ICUSPIDATUS 0 0 2 US 0 0 2 ICUSPS 1 0 0 2 ICUSPS 1 0 0 0 2 ICUSPS 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | COPEPODA                              |           |     |          |                         |
| 1C01DA 32 37 1 1 C1.0PS 1 0 0 2 2 CL.0PS 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | CYCLOPS BICUSPIDATUS                  | 0         | 0   | 8        |                         |
| 1COIDA 32 37 1 CLOPS 1 0 0 PGDA 17 8 1 A AZTECA 13 6 11  | DIAPTONUS                             | 0         | 0   | ~        |                         |
| CLOPS CLOPS CLOPS CLOPS CLOPS FGDA 17 8 † 17 8 † 17 8 † 18 6 11 8 11 11 6 11   | TABBACTICOTOR                         | ç         | į   |          |                         |
| CLOPS  |                                       | 7         | ì   | -        |                         |
| PGDA<br>17 8 1<br>S 6 8 461<br>A AZTECA 13 6 11  | MACROCYCLOPS                          | -         | 0   | 0        |                         |
| S 6 8 461  | ALL COPEPGDA                          |           |     |          | 516                     |
| S 6 8  | DSTRACODA                             | 11        | 40  | +        | 179                     |
|  | AMPHI PODA                            |           |     |          |                         |
| 5  | GAMMARUS                              | 9         | •   | 461      |                         |
|  | HYALELLA AZTECA                       | 5         | ø   | =        |                         |
| ACCOUNT IN   | ALL AMOUNTOUS                         |           |     |          |                         |

| T. 16 STATION 2 (CONT'D)  GRAB COUNTS  1   | MACROZOGBENTHOS PONAR GRAB COUNT DATA |            |            |                  | 10/18/83      |
|--|---------------------------------------|------------|------------|------------------|---------------|
| MIDAE  MIDAE  MIDAE  RA  RA  RA  RA  RA  RA  RA  RA  RA  | TRANSECT.16 STATION 2 (CONT'D)        | ē          | 5          | 2                |               |
| MIDAE  AE  AE  AE  AAE  AAE  AAE  AAE  AA  | TAXON                                 | <b>3</b> - | 5 %<br>9   | <u> </u>         | NO./SQ. METER |
| MIDAE  AE  RA  IDAE  LA  ROPTERA  PODDIDAE  PTERA  MIDAE  T 8 0   | DIPTERA                               |            |            | !<br>!<br>!<br>! |               |
| E  | CERATOPOGONIDAE                       | <b>-</b> ; | ស (        | 0 ;              |               |
| E  | EMPIDIDAE                             | ? -        | <b>9</b> C | 2 C              | 1246          |
| E 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | ALL DIPTERA                           | •          | •          | •                | 1295          |
| 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | EPHEME ROPT ERA                       |            |            |                  |               |
| 11 1  1DAE  LA  ROPTERA  1SDAE  HE  PODIDAE  OPUS  PTERA  11 1  O 0  O 0  PODIDAE  OPUS  PTERA   | CAENIS                                | 7          | ∞          | 0                |               |
| 11 1 1DAE  | EPHEMERIOAE                           |            |            |                  |               |
| 1DAE 1.A ROPTERA ROPTERA 1.DAE HE O O PODIDAE OPUS PTERA 1.A 1.A 1.A 1.A 1.A 1.A 1.A 1.A 1.A 1.  | MEXAGENIA                             | =          | -          | 6                |               |
| 10   | EPHEMERELLIDAE                        |            |            |                  |               |
| TOPTERA   ROPTERA   CO   CO   CO   CO   CO   CO   CO   C   | EPHEMERELLA                           | -          | 0          | 0                |               |
| 11DAE HE HE AE S POOIDAE OPUS PTERA  | ALL EPHEMEROPTERA                     |            |            |                  | 213           |
| SYCHIDAE  PSYCHE  CRIDAE  CIDES  CIDE | TRICHOPTERA                           |            |            |                  |               |
| ERIDAE CIDES | HYDROPSYCHIDAE<br>HYDROPSYCHE         | 0          | 0          | ø                |               |
| CIDES 0 0  CIDES 0 0  MTROPODIDAE 2 0  CHTROPUS 2 0  ICHOPTERA   |                                       |            |            |                  |               |
| NTROPODIDAE  ENTROPUS  2 O  ICHOPTERA  | MYSTACIDES                            | 0          | 0          | -                |               |
| ENTROPUS 2 0 ICHOPTERA   |                                       |            |            |                  |               |
| ALL TRICHOPTERA  | POLYCENTROPUS                         | 8          | 0          | 0                |               |
|  | ALL TRICHOPTERA                       |            |            |                  | 7             |
| ACCUTA   |                                       | ď          | c          | c                | •             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |             |        |            | 10/18/83                |
|---------------------------------------|-------------|--------|------------|-------------------------|
| TRANSECT 16 STATION 2 (CONT'D)        |             |        |            |                         |
| TAXON                                 | GRAB COUNTS | გ<br>2 | STS 6      | ESTIMATED NO./SQ. METER |
| GASTROPODA                            |             | •      |            |                         |
|                                       | 2           | •      | 777        |                         |
| ELIMIA LIVESCENS                      | ч           | -      | 35         |                         |
| GYRAULUS                              | 25          | 10     | 79         |                         |
| LYMAEA                                | 0           | 0      | 7          |                         |
|                                       | •           | ,      |            |                         |
| PHYSA<br>                             | 80          | 0      | <b>3</b> 6 |                         |
|                                       | 71          | -      | -          |                         |
| VALVATA TRICARINATA                   | 0           | 0      | 116        |                         |
| ALL GASTROPODA                        |             |        |            | 3664                    |
| PELECYPODA<br>SPHAERIDAE<br>PISIDIUM  | ç           | 0      | 5          | et<br>et                |
| ALL PELECYPODA                        | !           | )      |            |                         |
|                                       |             |        |            | 900                     |

| DETROIT RIVER TRANSECT 16 STATION 3 |        | č     | 1           | 20144          |
|-------------------------------------|--------|-------|-------------|----------------|
| TAXON                               | -<br>- | 1 2 3 | 00          | NO./SQ. METER  |
| _                                   | 4      | 0     | ٥           | 28             |
| ALL CNIDARIA                        |        |       |             | 28             |
| RHABDOCOELA                         | ٥      | 0     | -           | 7              |
| NEMERTINEA                          | 28     | •     | <b>4</b> 80 | 909            |
| NEMATODA                            | 1      | 9     | 56          | 337            |
| OLIGOCHAETA<br>SPIROSPERMA          | -      | ٥     | 6           |                |
| STYLARIA                            | 0      | -     | 0           |                |
| OTHER<br>ALL OLIGOCHAETA            | 203    | 6     | 329         | 4338           |
| MANAYUNKIA SPECIOSA                 | 32     | 24    | 1           | <b>5</b> 03    |
| COPEPODA DIAPTOMUSALL COPEPODA      | *      | 0     | 0           | 92 92<br>73 73 |
| AMPHIPODA<br>GAMMARUS<br>           | 0      | •     | 8           | 2 :            |

| MACROZODBENTHOS PONAR GRAB COUNT DATA  |     |       |     | 10/18/83       |
|--|-----|-------|-----|----------------|
| TRANSECT 16 STATION 3 (CONT'D)   | 90  | Č     |     | 400            |
| TAXON  | - C | 1 2 3 | 2 E |                |
| DIPTERA<br>CHIROMOMIDAE  | Ξ   | 24    | 04  | 516            |
| EPHEMEROPTERA<br>Caenidae<br>Caenic  | c   | •     | •   |                |
| BAETIDAE   | •   | > (   | 0 ( |                |
| ALL EPHEMEROPTERA  | -   | >     | N   | 76             |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE  | -   | 0     | =   | <b></b>        |
| ACARINA  | 0   | 0     | 0   | 62             |
| GASTROPODA   | φ   | 8     | 4   |                |
| i —  | -   | 0     | -   |                |
| 1  | 8   | -     | 0   |                |
| ALL GASTROPODA   |     |       |     | 117            |
| PELECYPODA   |     |       |     |                |
| SPHAERIDAE<br>PISIDIUM   | ĸ   | 0     | 0   |                |
| No the state of th | c   | •     | c   |                |
|  | >   | -     | >   |                |
| ALL SPHAERIIDAE<br>ALL PELECYPODA  |     |       |     | 89 89<br>57 57 |

| MACKUZUUBENIFUS PUNAK GKAB CUUNI DAIA |          |                 |      | 10/18/83      | /83  |
|---------------------------------------|----------|-----------------|------|---------------|------|
| DETROIT RIVER TRANSECT 17 STATION 1   | ā        | STANDOUR STANDS | ST/N | ECTIMATED     | 2    |
| TAXON                                 | <b>.</b> | 8 6             |      | NO./SQ. METER | METE |
| RHABDOCOELA                           | •        | -               |      | 10.00         |      |
| TRICLADIDA                            | 4        | 8               | 4    | 69            |      |
| NEMERTINEA                            | 0        | 50              | 88   | 1019          |      |
| NEMATODA                              | 82       | 174             | 278  | 3677          |      |
| HIRUDINEA<br>ERPOBOLLIDAE             | m        | -               | m    |               |      |
| _                                     | 0        | -               | 0    |               |      |
| HELOBDELLA STAGNALIS                  | -        | 0               | 0    |               |      |
| ALL HIRUDINEA                         |          |                 |      | 62            |      |
| OLIGOCHAETA<br>Spirosperma            | 80       | Ξ               | 21   |               |      |
| STYLARIA                              | 5        | ٥               | -    |               |      |
| OTHER<br>ALL OLIGOCHAETA              | 256      | 136             | 202  | 4483          |      |
| POLYCHAETA<br>Manayumkia Speciosa     | •        | 0               | •    | 10<br>10      |      |
| ALL POLYCHAETA                        |          |                 |      | 30<br>30      |      |

| MACKUZUGBENIHUS PUNAK GRAB CUUNI DAIA       |              |                 |          | 10/18/83      |
|---|--------------|-----------------|----------|---------------|
| TRANSECT 17 STATION 1 (CONT'D)              | Ö            | STATION OF BATE | T T      | CSTAMITOS     |
| TAXON                                       | <b>5</b> – [ | 200             | 6        | NO./SQ. METER |
| TICOIDA                                     | 192          | 161             | 87       | 3030          |
| ALL COPEPODA                                |              |                 |          | 3030          |
| AMPHIPODA<br>Gammarus                       | -            | ო               | ø        |               |
|   | Ŋ            | -               | 0        |               |
| ALL AMPHIPODA                               |              |                 |          | 110           |
| ISOPODA<br>ASELLUS                          | 0            | -               | •        |               |
| LIRCEUS                                     | 4            | 60              | ß        |               |
| ALL ISOPODA                                 |              |                 |          | 124           |
| DIPTERA<br>CERATOPOGONIDAE                  | -            | 0               | <b>©</b> | !             |
| CHIRDNOMIDAE<br>ALL DIPTERA                 | 86           | <b>4</b>        | 0        | 1322          |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>EPHEMERIDAE | 4            | •               | 4        | ,             |
| ALL EPHEMEROPTERA                           |              |                 |          | 150           |
| POLYCENTROPODIDAE PHYLOCENTROPUS            | · " რ        | 0               | •        |               |
| ALL TRICHOPTERA                             |              |                 |          | 28            |
| ACARINA                                     | 4            | -               | 0        | 34            |
|   |              |                 |          |               |

| TRANSECT 47 STATION 1 (CONT.D) | ;           | ;           |             | ,                                     |
|--------------------------------|-------------|-------------|-------------|---------------------------------------|
| . !                            | GRA<br>-    | 8<br>7      | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER            |
| GASTROPODA                     | ;<br>;<br>; | !<br>!<br>! |             | • • • • • • • • • • • • • • • • • • • |
| AMNICOLA                       | 7           | Ø           | 23          |                                       |
| ***                            |             |             |             |                                       |
| ELIMIA LIVESCENS               | -           | -           | 0           |                                       |
|                                |             |             |             |                                       |
| FERISSIA                       | 0           | 7           | 0           |                                       |
| 1.552211                       |             |             |             |                                       |
| GYRAULUS                       | 0           | 0           | ო           |                                       |
|                                |             |             |             |                                       |
| PHYSA                          | 0           | 0           | -           |                                       |
| 1,111                          |             |             |             |                                       |
| PLEUROCERA ACUTA               | 0           | 8           | -           |                                       |
|                                |             |             |             |                                       |
| VALVATA TRICARINATA            | -           | 0           | 0           |                                       |
|                                |             |             |             |                                       |
| OTHER                          | -           | 0           | 0           |                                       |
| ALL GASTROPODA                 |             |             |             | 358                                   |
| PELECYPODA                     |             |             |             |                                       |
| SPHAERIIDAE                    |             |             |             |                                       |
| PISIDIUM                       | <b>.</b>    | Ø           | 23          | 344                                   |
| 111111111111                   |             |             |             |                                       |
| UNIONIDAE                      | -           | 0           | -           |                                       |
| ALL PELECYPODA                 |             |             |             | 358                                   |

| MACKUZUUBENIHUS PUNAR GRAB COUNT DATA     |            |             |      | 10/18/83             |
|---|------------|-------------|------|----------------------|
| DETROIT RIVER TRANSECT 17 STATION 2       | ğ          | GRAB COUNTS | UNTS | ESTIMATED            |
| TAXON                                     | -          | 7           | 6    | NO./SQ. METER        |
| CNIDARIA<br>HYDRA                         | 6          | 8           | 7    | 06                   |
| ALL CNIDARIA                              |            |             |      | 06                   |
| TRICLADIDA                                | 8          | 0           | 0    | 4                    |
| NEMERTINEA                                | 39         | 8           | 49   | 937                  |
| NEMATODA                                  | 99         | 11          | 31   | 785                  |
| OL I GOCHAETA<br>Spirosperma              | 80         | 36          | 9    |                      |
| STYLARIA                                  | 0          | -           | 0    |                      |
| OTHER<br>ALL OLIGOCHAETA                  | 5          | 16          | 3    | 1694                 |
| POLYCHAETA MANAYUNKIA SPECIOSA            | 930        | 830 1030    | 671  | 17430                |
| ULADOCERA<br>DAPHALA<br><br>ALL CLADOCERA | <b>6</b> 0 | 0           | -    | <b>6</b> 62<br>62 62 |
| COPEPODA<br>DIAPTOMUS                     | •          | 9           | 0    |                      |
| HARDOLI COLDA                             | 0          | 0           | 0    |                      |
| ALL COPEPODA                              |            |             |      | 172                  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |     |             |              | 10/18/83      |
|---|-----|-------------|--------------|---------------|
| TRANSECT 17 STATION 2 (CONT'D)                  | GRA | GRAB COUNTS | STAN         | ESTIMATED     |
| TAXON   | -   | 7           | 6            | NO./SQ. METER |
| OSTRACODA                                       | 25  | 0           | 7            | 186           |
| AMPHI PODA<br>GAMMARUS                          | 0   | -           | 0            | 7             |
| ALL AMPHIPODA                                   |     |             |              | 7             |
| DIPTERA<br>CHIRONOMIDAE                         | 90  | 12          | 4            | 248           |
| EPHEMEROPTERA<br>BAETISCIDAE<br>BAETISCA        | •   | ĸ           | <del>.</del> |               |
| ALL EPHENOPTERA                                 |     |             |              | 172           |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | •   | 8           | <b>5</b> 6   |               |
| HYDROPSYCHE                                     | 0   | ო           | 0            |               |
| LEPTOCERIDAE<br>CERACLEA                        | 0   | 0           | +            |               |
| ALL TRICHOPTERA                                 |     |             |              | 188           |
| ACARINA   | 0   | 4           | 0            | <b>58</b>     |
| GASTROPODA<br>AMNICOLA                          | 22  | •           | <b>58</b>    |               |
| ELIMIA LIVESCENS                                | 2   | 23          | ĸ            |               |
| HELISOMA  | ÷   | 0           | 0            |               |
|   | -   | m           | -            |               |
| ALL GASTROPODA                                  |     |             |              | 792           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |                  |                  | 10/18/83                              |
|---------------------------------------|------------------|------------------|---------------------------------------|
| TRANSECT 17 STATION 2 (CONT'D)        | GRAR             | GRAR COUNTS      | FSTIMATED                             |
| TAXON                                 | -                | 1 2 3            | ~                                     |
| PELECYPODA                            | !<br>!<br>!<br>! | ,<br>!<br>!<br>! | ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! |
| SPHAERIIDAE                           |                  |                  |                                       |
| PISIDIUM                              | =                | ඩ<br>ත           | 131                                   |
|                                       |                  |                  |                                       |
| UNIONIDAE                             | 8                | 0                |                                       |
| ALL DELECYDODA                        |                  |                  | -                                     |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |           |             |     | 10/18/83        |
|---------------------------------------|-----------|-------------|-----|-----------------|
| DETROIT RIVER TRANSECT 17 STATION 3   | AR +      | GRAB COUNTS | STA | ESTIMATED NOTED |
| CNIDARIA                              | •         | •           | •   |                 |
| ALL CNIDARIA                          | -         | 3           | •   | n sn            |
| RHABDOCOELA                           | -         | 0           | 0   | 7               |
| TRICLADIDA                            | 0         | 0           | -   | 7               |
| NEMERTINEA                            | 52        | 34          | 7   | 689             |
| NEMATODA                              | <b>58</b> | 99          | 4   | 675             |
| OLIGOCHAETA<br>SPIROSPERMA            | 36        | 9           | 25  |                 |
| DTHER<br>ALL OLIGOCHAETA              | 9         | 57          | 49  | 1735            |
| POLYCHAETA<br>Manayumkia speciosa     | 491 1033  | 033         | 574 | 14448           |
| ALL POLYCHAETA                        |           |             |     | 14448           |
|                                       | -         | 0           | 0   |                 |
| HARPACTICOIDA                         | 0         | -           | 0   |                 |
| ALL COPEPODA                          |           |             |     | 7               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |      |             |          | 10/18/83      |
|---|------|-------------|----------|---------------|
| TRANSECT 17 STATION 3 (CONT'D)                  | GRAB | GRAB COUNTS | NTS      |               |
| AXUN  | - :  | 2           | e        | NO./SQ. METER |
| AMPHIPODA<br>Gammarus                           | 0    | -           | က        | 28            |
| ALL AMPHIPODA                                   |      |             |          | 28            |
| TERRESTRIAL INSECT                              | -    | 0           | 0        | 7             |
| DIPTERA<br>CHIRONOMIDAE                         | 0    | 4           | \$       | 165           |
| EPHEMEROPTERA<br>Baetiscidae<br>Baetisca        | 0    | ო           | 1        |               |
| ALL EPHEMEROPTERA                               |      |             |          | 69            |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | 5    | ∞           | 87       |               |
| HYDROPSYCHE                                     | 0    | 0           | 80       |               |
| LEPTOCERIDAE CERACLEA                           | 0    | 0           | -        |               |
| POLYCENTROPCDIDAE<br>NEURECLIPSIS               | 0    | 0           | ო        |               |
| ALL TRICHOPTERA                                 |      |             |          | . 970         |
| ACARINA   |      | 0           | 8        | 4             |
| GASTROPODA<br>AMNICOLA                          | ဖ    | •           | <b>5</b> |               |
| GYRAULUS  | 0    | -           | 0        |               |
| ALL GASTROPODA                                  |      |             |          | 227           |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |      |             |    | 10/18/83      |
|---------------------------------------|------|-------------|----|---------------|
| TRANSECT 17 STATION 3 (CONT'D)        | GRAB | GRAB COUNTS | ķ  | ESTIMATED     |
| TAXON 1 2 3 ND./SQ. METER             | -    | 2 3         |    | NO./SQ. METER |
| PELECYPODA                            |      |             |    |               |
| PISIOIUM                              | 0    | •           | ~  |               |
|                                       | c    | •           | K. |               |
|                                       | •    |             | •  |               |
| ALL SPHAERIIDAE                       |      |             |    | 131           |
| TRUNCILLA DOMACIFORMIS                | 0    | -           | 0  |               |
| ALL PELECYPODA                        |      |             |    | 138           |

|                                  |                       |      |             |           | 70/8:/0                    | 20  |
|----------------------------------|-----------------------|------|-------------|-----------|----------------------------|-----|
| DETROIT RIVER                    | TRANSECT 18 STATION 1 |      |             |           |                            |     |
| TAXON                            |                       | æ -  | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>ND./SQ. METER | TED |
| RHABDOCOELA                      |                       | 42   | 39          | 23        | 716                        |     |
| TRICLADIDA                       |                       | 0    | 165         | 0         | 1136                       |     |
| NEMERT INEA                      |                       | •    | 76          | Ξ         | 627                        |     |
| NEMATODA                         |                       | 7.1  | 11          | =         | 682                        |     |
| OL IGOCHAETA<br>NA I S           |                       | 0    | 5           | 91        |                            |     |
| SPIROSPERMA                      |                       | 337  | 69          | 4         |                            |     |
| STYLARIA                         |                       | 62   | 190         | 5         |                            |     |
| OTHER<br>ALL OLIGOCHAETA         |                       | 1585 | 899         | 897       | 26817                      |     |
| CLADOCERA<br>ILYOCRYPTUS         |                       | 0    | -           | 80        | 62                         |     |
| ALL CLADOCERA                    |                       |      |             |           | 62                         |     |
| COPEPODA<br>CYCLOPS BICUSPIDATUS | ITUS                  | 0    | -           | 60        |                            |     |
| DIAPTOMUS                        | i<br>i                | 0    | 16          | 0         |                            |     |
| MACROCYCLOPS                     |                       | -    | .0          | -         |                            |     |
| ALL COPEPODA                     |                       | •    |             |           | 186                        |     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA    |            |             |     | 10/19/83      |
|--|------------|-------------|-----|---------------|
| TRANSECT 18 STATION 1 (CONT'D)           | GRA        | GRAB COUNTS | NTS | ESTIMATED     |
| TAXON                                    | -          | 7           | 6   | NO./SQ. METER |
| AMPHIPODA                                |            |             |     |               |
| GAMMARUS                                 | m          | 0           | 0   |               |
|  | Ø          | Ø           | 0   |               |
| PONTOPOREIA HOYI                         | 0          | -           | 0   |               |
| ALL AMPHIPODA                            |            |             |     | 152           |
| DIPTERA<br>CHIRONOMIDAE                  | <b>4</b> 6 | 9           | Ø   | 572           |
| EPHEMEROPTERA<br>Heptageniidae           |            |             |     |               |
| STENONEMA<br><br>ALL EPHEMEROPTERA       | 0          | -           | 0   | -             |
| TRICHOPTERA                              |            |             |     |               |
| HYDROPSYCHIDAE<br>HYDROPSYCHE            | -          | -           | 0   |               |
| HYDROPTILIDAE                            | ¢          | c           | c   |               |
| HYDROPILLA                               | 7)         | 9           | 7   |               |
| POLYCENTROPODIDAE                        | •          | •           | •   |               |
| NEURECL IPSIS                            | -          | 0           | 0   |               |
| POLYCENTROPUS                            | -          | ო           | 0   |               |
| ALL TRICHOPTERA                          |            |             |     | 103           |
| ODONATA<br>COENAGRIONIDAE                | 0          | 8           | -   | . 12          |
| 40 40 40 40 40 40 40 40 40 40 40 40 40 4 | 7          | 9           | 0   | 117           |

| MACRUZOOBENTHOS PONAR GRAB COUNT DATA   |                  |             |          | 10/19/83                   | /83          |
|---|------------------|-------------|----------|----------------------------|--------------|
| TRANSECT 18 STATION 1 (CONT'D)          |                  |             |          |                            |              |
| TAXON                                   | GR -             | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER | TED<br>Meter |
| GASTROPODA                              | ,<br>!<br>!<br>! |             |          |                            | 1            |
| AMNICOLA                                | -                | ľ           | -        |                            |              |
| 1 |                  |             |          |                            |              |
| FERISSIA                                | 8                | 118         | <b>6</b> |                            |              |
|   |                  |             |          |                            |              |
| GYRAULUS                                | -                | <b>L</b> D  | 0        |                            |              |
| , |                  |             | ,        |                            |              |
| PHYSA                                   | -                | 0           | 0        |                            |              |
| ****                                    |                  |             | ı        |                            |              |
| VALVATA TRICARINATA                     | 0                | 0           | -        |                            |              |
|   |                  |             |          |                            |              |
| ALL GASTROPODA                          |                  |             |          | 1074                       |              |
| PELECYPODA                              |                  |             |          |                            |              |
| SPHAERIIDAE                             |                  |             |          |                            |              |
| PISIDIUM                                | ဓင္              | 15          | 23       | 468                        |              |
|   |                  |             |          |                            |              |
| ALL PELECYPODA                          |                  |             |          | 468                        |              |

| THE CONTRACT OF THE CONTRACT OF THE                   |      |             |           | 10/19/83                   |
|---|------|-------------|-----------|----------------------------|
| DETROIT RIVER TRANSECT 18 STATION                     | 8    |             |           |                            |
|   |      | GRAB COUNTS | CNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| ST  | 0    | -           | 0         | 7                          |
| ALL FISH  |      |             |           |                            |
| RHABDOCOELA   | 326  | 3           | 31        | 2672                       |
| TRICLADIDA  | 0    | 0           | 65        | 448                        |
| NEMERTINEA  | 72   | <b>5</b> 6  | 9         | 188                        |
| NEMATODA  | 17   | <b>6</b>    | 16        | 764                        |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>BATRACOBDELLA PHALERA | •    | 0           | -         |                            |
| ALL HIRUDINEA   |      |             |           | 7                          |
| OLIGOCHAETA<br>NAIS                                   | 11   | o,          | 49        |                            |
| SPIROSPERMA   | 404  | 16          | 165       |                            |
| STYLARIA  | 125  | 139         | 9         |                            |
| OTHER<br>ALL OLIGOCHAETA                              | 1320 | 873         | 1690      | 33662                      |
| POLYCHAETA<br>Manayunkia speciosa                     | 0    | 0           | 35        | 220                        |
| ALL POLYCHAETA  |      |             |           | 220                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |             |              |          | 10/19/83   |
|--|-------------|--------------|----------|--|
| TRANSECT 18 STATION 2 (CONT'D)             | 9           | Š            |          | 4  |
| TAXON                                      | #<br>*<br>* | 4 2 3        | 2 E      | NO./SQ. METER  |
| CLADOCERA                                  |             |              |          | , 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
|  | 9           | 0            | >        |  |
| EURYCERCUS LAMELLATUS                      | 0           | -            | 0        |  |
| ILYOCRYPTUS                                | 16          | 0            | 0        |  |
| ALL CLADOCERA                              |             |              |          | 227  |
| COPEPODA<br>CYCLOPS BICUSPIDATUS           | 0           | 80           | 0        |  |
| DIAPTOMUS                                  | 91          | 0            | 0        |  |
| ALL COPEPODA                               |             |              |          | 165  |
| AMPHIPODA<br>GAMMARUS                      | 15          | <del>-</del> | 0        |  |
| -  | 21          | 6            | -        |  |
| ALL AMPHIPODA                              |             |              |          | 324  |
| OIPTERA CHIROROMIDAE                       | ო           | 7            | 1        | 117  |
| CULICIDAE                                  | 0           | -            | 0        |  |
| PSYCHODIDAE<br>ALL DIPTERA                 | o ·         | 0            | -        | 131  |
| TRICHOPTERA<br>Hydroptilidae<br>Hydroptila | 0           | 0            | 8        |  |
| POLYCENTROPODIDAE POLYCENTROPUS            | 0           | 0            | <b>+</b> |  |
| ALL TRICHOPTERA                            |             |              |          | 21   |
| ODONATA<br>COENAGRIONIDAE                  | 0           | 8            | 0        | 4  |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |              |         |             | 10/19/83      |
|---------------------------------------|--------------|---------|-------------|---------------|
| TRANSECT, 18 STATION 2 (CONT'D)       |              |         |             |               |
|                                       | <b>8</b> 89  | ნ<br>ლე | GRAB COUNTS | ESTIMATED     |
| IAXON                                 | - !          | 7       | ၉           | NO./SQ. METER |
| ACARINA                               | <del>0</del> | -       | 50          | 275           |
| GASTROPODA                            |              |         |             |               |
| AMNICOLA                              | -            | 6       | Ē.          |               |
| LIVES                                 | 0            | -       | 0           |               |
| FERISSIA                              | Ģ            | 11      | 4           |               |
| GYRAULUS                              | 6            | -       | 0           |               |
| PHYSA                                 | =            | Ø       | 6           |               |
| ALL GASTROPODA                        |              |         |             | 689           |
| PELECYPODA<br>SPHAERIIDAE             |              |         |             |               |
| PISIDIUM                              | 12           | ∞       | ī.          |               |
| SPHAERIUM                             | 0            | 0       | -           |               |
| ALL SPHAERIIDAE<br>ALL PELECYPODA     |              |         |             | 248<br>248    |

| MACKULUUDENINGS PUNAN GRAD COOKS DATA                 |     |             |     |               |
|---|-----|-------------|-----|---------------|
| DETROIT RIVER TRANSECT 18 STATION 3                   | GRA | GRAB COUNTS | STN | ESTIMATED     |
| TAXON   | -   | 2           | 6   | NO./SQ. METER |
| RHABDCOELA  | 6   | 0           | œ   | 117           |
| NEMERTINEA  | O   | 0           | 38  | 324           |
| OLIGOCHAETA<br>Spirosperma                            | 36  | 8           | 2   |               |
| OTHER<br>ALL OLIGOCHAETA                              | 408 | 223         | 215 | 6281          |
| SPEC  | 0   | 0           | ∞   | និង           |
| ALL POLYCHAETA  |     |             |     | ប្            |
| OSTRACODA   | 0   | စ           | 0   | 62            |
|   | -   | 0           | •   | 7             |
| ALL AMPHIPODA   |     |             |     | ^             |
| DIPTERA<br>CHIRONOMIDAE<br>PSYCHODIDAE<br>ALL DIPTERA | 0-  | 00          | -0  | r 4t          |
| ACABINA   | 0   | 0           | က   | 21            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |     | 20,00,00  |
|---------------------------------------|-----|-------------|-----|-----------|
| TRANSECT 18 STATION 3 (CONT'D)        |     |             |     | 10/19/83  |
| TAXON                                 | gr. | GRAB COUNTS | NTS | ESTIMATED |
| GASTROPODA                            | -   | 2           | 3   | -         |
| AMNICOLA                              | •   |             |     |           |
|                                       | -   | თ           | _   |           |
| CAMPELOMA                             | •   |             |     |           |
| , , , , , , , , , , , , , , , , , , , |     | 0           | 0   |           |
| FERISSIA                              |     |             |     |           |
| ******                                | 0   | 0           | _   |           |
| VALVATA SINCERA                       | 2   | c           | c   |           |
| ALL GASTROPODA                        |     | ,           | >   |           |
| PELECYPODA                            |     |             |     | 103       |
| SPHAERIIDAE                           |     |             |     |           |
| PISIDIUM                              |     |             |     |           |
| 11611                                 | ç   | ß,          | 37  | 358       |
| ALL PRIFCYDONA                        |     |             |     | )         |

358

| DETROIT RIVER TAXON            | TRANSECT 19 STATION 1   | GRA | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
|--------------------------------|---|-----|-------------|----------|----------------------------|
| CNIDARIA                       | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; | 0   | -           | 0        | 7                          |
| ALL CNIDARIA                   |   |     |             |          | 7                          |
| RHABDOCOELA                    |   | 6   | 26          | 4        | 475                        |
| TRICLADIDA                     |   | 0   | 0           | 17       | 117                        |
| NEMERTINEA                     |   | 36  | 56          | 7.1      | 1123                       |
| NEMATODA                       |   | 80  | 8           | 31       | 393                        |
| OL IGOCHAETA<br>Nais           |   | 0   | 0           | 0        |                            |
| SPIROSPERMA                    |   | ស   | 50          | 32       |                            |
| STYLARIA                       |   | 0   | 0           | -        |                            |
| OTHER<br>ALL OLIGOCHAETA       |   | 62  | 693         | 5        | 2438                       |
| TA<br>NKIA SPEC                | 0SA   | 112 | 56          | 80       | 1708                       |
| ALI POLYCHAETA                 | 1<br>1<br>1   |     |             |          | 1708                       |
| COPEPODA<br>EPISHURA LACUSTRIS | 115   | 0   | 0           | €        |                            |
| HARPACTICOIDA                  | 1   | 0   | 60          | 0        |                            |
| ALL COPEPODA                   |   |     |             |          | 110                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |     |          |            | 10/19/83       |
|---|-----|----------|------------|----------------|
| TRANSECT 19 STATION 1 (CONT'D)                            | Ç   | <u> </u> | u<br>F     | 477            |
| TAXON   | ¥ - | 1 2 3    | <u>ი</u> ო | NO./SQ. METER  |
| AMPHI PODA<br>GAMMARUS                                    | 0   | <b>6</b> | ٥          | 21             |
| ALL AMPHIPODA   |     |          |            | 21             |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | m O | 0-       | 0-         | <del>г</del> с |
| ACARINA   | ø   | č        | 0          | 145            |
| GASTROPODA<br>Amnicola                                    | -   | ო        | រប         |                |
| ELIMIA LIVESCENS  | 0   | 0        | -          |                |
| FERISSIA  | 0   | 0        | ო          |                |
| PHYSA   | 0   | 0        | -          |                |
| ALL GASTROPODA  |     |          |            | 96             |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                     | 65  | <b>4</b> | 6          | 88             |
| ALL PELECYPODA  |     |          |            | 888            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |          |     | 10/19/83      |
|---------------------------------------|-----|----------|-----|---------------|
| DETROIT RIVER TRANSECT 19 STATION 2   | Ç   | Ç        |     | 1             |
| TAXON                                 | ž – | 4 2 3    | ν ω | NO./SQ. METER |
|                                       | 7   | 4        | 0   | 4             |
| NEMERTINEA                            | 72  | <b>4</b> | 65  | 1281          |
| NEMATODA                              | ∞   | •        | 4   | 138           |
| OLIGOCHAETA<br>Spirosperma            | 0   | 1        | 6   |               |
| STYLARIA                              | 0   | 4        | 0   |               |
| OTHER<br>ALL OLIGOCHAETA              | 289 | 198      | 149 | 4587          |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA     | 996 | 548      | 501 | 13890         |
| ALL POLYCHAETA                        |     |          |     | 13890         |
| COPEPODA<br>DIAPTOMUS                 | 0   | 4        | 0   | 28            |
| ALL COPEPODA                          |     |          |     | 28            |
| AMPHI PODA<br>GAMMARUS                | 0   | 4        | 0   | 28            |
| ALL AMPHIPODA                         |     |          |     | 28            |
| DIPTERA<br>CHIRONOMIDAE               | -   | 0        | 0   | 7             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |          |                      | 10/19/83      |
|---------------------------------------|----------|----------|----------------------|---------------|
| TRANSECT 19 STATION 2 (CONT'D)        | 9        |          | į                    | 44            |
| TAXON                                 | <b>Y</b> | 1 2 3    | n en                 | NO./SO. METER |
| TRICHOPIERA<br>LEPTOCERIOAE           |          | 1<br>    | )<br>)<br> <br> <br> | 1             |
| DECETIS                               | 0        | 0        | -                    |               |
| ALL TRICHOPTERA                       |          |          |                      | 7             |
| ACARINA                               | -        | •        | -                    | 21            |
| GASTROPODA<br>AMMICOLA                | c        | ď        | e                    |               |
|                                       | •        | •        | •                    |               |
| ELIMIA LIVESCENS                      | 19       | <b>o</b> | <b>co</b>            |               |
| ALL GASTROPODA                        |          |          |                      | 289           |
| PELECYPODA<br>Sphaeriidae             |          |          |                      |               |
| PISIDIUM                              | -        | 22       | œ                    | 213           |
| ALL PELECYPODA                        |          |          |                      | 213           |

| MÁCROZOOBENTHOS PONAR GRAB COUNT DATA |           |             |     | 10/19/83                   |
|---------------------------------------|-----------|-------------|-----|----------------------------|
| DETROIT RIVER TRANSECT 19 STATION 3   | ļ         |             |     |                            |
| TAXON                                 | GRAB<br>- | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                           | -         | -           | -   | 21                         |
| TRICLADIDA                            | 0         | -           | 0   | ۲                          |
| NEMERTINEA                            | 26        | 43          | 21  | 826                        |
| NEMATODA                              | 8         | 7           | -   | 34                         |
| OLIGOCHAETA<br>Nais<br>               | -         | 0           | -   |                            |
| SPIROSPERMA                           | -         | 6           | Ξ   |                            |
| OTHER<br>ALL OLIGOCHAETA              | 8         | w           | ស   | 207                        |
| MANAYUMKIA SPECIOSA                   | 8         | е           | က   | 95                         |
| ALL POLYCHAETA                        |           |             |     | ន                          |
| AMPHIPODA<br>GAMMARUS<br>AMPHIPODA    | -         | 0           | 0   |                            |
| TERRESTRIAL INSECT                    | 0         | -           | 0   | 7                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |       | 10/19/83      |
|---------------------------------------|------|-------------|-------|---------------|
| TRANSECT 19 STATION 3 (CONT'D)        |      |             |       |               |
| TAXON                                 | GRAE | GRAB COUNTS | STN   | ESTIMATED     |
|                                       | - ;  | 7           | 70    | NO./SQ. METER |
| GASTROPODA                            |      | <br>        | -<br> |               |
|                                       | -    | 0           | -     |               |
| ELIMIA LIVESCENS                      | -    | ო           | 0     |               |
| PHYSA                                 | (    | •           | • •   |               |
| 1 1 2 1                               | >    | 4           | 0     |               |
| ALL GASTROPODA                        |      |             |       | 69            |
| PELECYPODA<br>Sphaeriidae             |      |             |       |               |
| PISIDIOM                              | 0    | 8           | 0     | 4             |
| ALL PELECYPODA                        |      |             |       | •             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |          | 10/19/83                                       |
|---------------------------------------|-----|-------------|----------|--|
| DETROIT RIVER TRANSECT 20 STATION 1   | (   |             | 9        |  |
|                                       | - 6 | GRAB COUNTS | S E      | ESTIMATED<br>NO./SQ. METER                     |
|                                       | 13  | -           | 0        | 9<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| ALL CNIDARIA                          |     |             |          | 96   |
| RHABDOCOELA                           | 12  | 36          | 80       | 868  |
| TRICLADIDA                            | 126 | 52          | 16       | 1749   |
| NEMERTINEA                            | 38  | 101         | 42       | 1288   |
| NEMATODA                              | 5   | 9           | 34       | 578  |
| OLIGOCHAETA<br>Nais                   | 0   | ••          | €        |  |
| SPIROSPERMA                           | 33  | 8           | 9.       |  |
| STYLARIA                              | 145 | 42          | 90       |  |
| OTHER<br>ALL OLIGOCHAETA              | 4   | 115         | <u> </u> | 5647   |
| POLYCHAETA<br>Manayunkia speciosa     | 6   | Ξ           | 57       | 558  |
| ALL POLYCHAETA                        |     |             |          | 558  |
| CLADOCERA<br>ILYOCRYPTUS              | 0   | -           | 0        |  |
| CRYSTAL                               | -   | -           | 0        |  |
| ALL CLADOCERA                         |     |             |          | 21   |

| MACHOLOGORININGS FUNAN GRAD COOK! DAIR |          |    |       | 59/61/01      |
|--|----------|----|-------|---------------|
| TRANSECT 20 STATION 1 (CONT'D)         | GB.      | 5  | NTV   | FSTTMATED     |
| TAXON                                  | -        | 7  | 1 2 3 | NO./SQ. METER |
| COPEPODA<br>HARPACTICOIDA              | 0        | 80 | ٥     |               |
|  | !        |    |       |               |
| MACROCYCLOPS                           | t.       | 0  | 7     |               |
| ALL COPEPODA                           |          |    |       | 172           |
| AMPHIPODA                              |          |    |       |               |
| GAMMARUS                               | 4        | 0  | 17    |               |
|  | <b>8</b> | 0  | 6     |               |
| ALL AMPHIPODA                          |          |    |       | 716           |
| DIPTERA<br>CHIRONOMIDAE                | 62       | 89 | 27    | 1198          |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS    | -        | 7  | -     |               |
| AMETROPIDAE<br>TRICHORYTHODES          | -        | 0  | 0     |               |
| ALL EPHEMEROPTERA                      |          |    |       | 34            |
| TRICHOPTERA                            |          |    |       |               |
| HYDROPSYCHIDAE<br>CHEUMA TOPSYCHE      | 0        | 7  | 0     |               |
| HYDROPSYCHE                            | 0        | -  | 0     |               |
| HYDROPIT! IDAF                         |          |    |       |               |
| HYDROPTILA                             | က        | 9  | +     |               |
| POLYCENTROPODIDAE                      |          |    |       |               |
| NEURECLIPSIS                           | 0        | 7  | 0     |               |
| POLYCENTROPUS                          | 7        | -  | 6     |               |
| ALL TRICHOPTERA                        |          |    |       | 179           |
| ODONATA<br>COENAGRIONIDAE              | 4        | 0  | n     | 48            |
|  |          |    |       |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |     | 10/19/83      |
|---------------------------------------|------|-------------|-----|---------------|
| TRANSECT 20 STATION 1 (CONT'D)        | GRAE | GRAB COUNTS | KTS | ESTIMATED     |
|                                       | -    | ~           | 6   | NO./SQ. METER |
| ACARINA                               | on . | 0           | 4   | 110           |
| GASTROPODA<br>Amnicola                | £    | 10<br>20    | ო   |               |
| ELIMIA LIVESCENS                      | 8    | ~           | 0   |               |
| FERISSIA                              | 1    | -           | 8   |               |
| GYRAULUS                              | -    | -           | 0   |               |
| PHYSA                                 | 4    | -           | 4   |               |
| ALL GASTROPODA                        |      |             |     | 682           |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | 43   | 8           | 7   | 923           |
| ALL PELECYPODA                        |      |             |     | 823           |

| MACROZOOBENTHOS PO                | MACROZOOBENTHOS PONAR GRAB COUNT DATA |         |             |     | 10/19/83      |
|-----------------------------------|---------------------------------------|---------|-------------|-----|---------------|
| DETROIT RIVER                     | TRANSECT 20 STATION 2                 | S A A A | SPAR COUNTS | V L | FSTIMATED     |
| TAXON                             |                                       |         | 7           | , m | NO./SQ. METER |
| CNIDARIA<br>HYDRA                 |                                       | 0       | 0           | 4   | 28            |
| ALL CNIDARIA                      |                                       |         |             |     | 28            |
| RHABDOCOELA                       |                                       | -       | 0           | -   | 14            |
| TRICLADIDA                        |                                       | ø       | 4           | 25  | 310           |
| NEMERTINEA                        |                                       | 7.4     | 34          | 54  | 1116          |
| NEMATODA                          |                                       | 93      | 4           | 31  | 943           |
| OLIGOCHAETA<br>Spirosperma        |                                       | 31      | ~           | 9   |               |
| OTHER<br>ALL DLIGOCHAETA          |                                       | 38      | õ           | ō   | 744           |
| POLYCHAETA<br>Manayunkia speciosa | OSA                                   | თ       | 0           | 8   | 76            |
| ALL POLYCHAETA                    | f 1                                   |         |             |     | 76            |
| COPEPODA<br>DIAPTOMUS             |                                       | -       | 0           | 0   | 4             |
| ALL COPEPODA                      |                                       |         |             |     | ٢             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA        |      |    |             | 10/19/83      |
|--|------|----|-------------|---------------|
| TRANSECT 20 STATION 2 (CONT.D)               | GRAE | 8  | GRAB COUNTS | ESTIMATED     |
| TAXON  | - !  | 7  | 6           | NO./SO. METER |
| NS<br>US                                     | ın   | 0  | 0           |               |
|  | -    | 0  | 0           |               |
| ALL AMPHIPODA                                |      |    |             | 7             |
| DIPTERA<br>CHIRONOMIDAE                      | -    | 0  | 0           |               |
| TRICHOPTERA<br>Hydropsychidae<br>Hydropsyche | a    | 0  | 0           |               |
| ALL TRICHOPTERA                              |      |    |             | 7             |
| ACARINA                                      | -    | 0  | -           | 4             |
| GASTROPODA<br>AMNICOLA                       | ā    | 7  | ð           |               |
| ELIMIA LIVESCENS                             | 112  | 28 | 38          | ***           |
| FLECYFODA<br>SPHAERIIDAE                     |      |    |             |               |
| MOIOISIA                                     | 8    | 0  | 0           |               |
| ALL PELECYPODA                               |      |    |             | 7             |

| DETROIT RIVER TRANSECT TAXON CNIDADIA |                       |           |     |             |                      |
|---------------------------------------|-----------------------|-----------|-----|-------------|----------------------|
|                                       | TRANSECT 20 STATION 3 |           |     |             |                      |
| ;<br>;<br>;                           |                       | GRAB<br>1 | 200 | GRAB COUNTS | ESTIMATED NO /50 MET |
| HYDRA                                 | <br>                  | -         |     |             |                      |
| ALL CNIDARIA                          |                       | •         | 2   | >           | 9                    |
| RHABDOCOELA                           |                       | •         | ,   |             | 96                   |
| TRICIARIDA                            |                       | >         | 4   | -           | 34                   |
| 40104321                              |                       | 0         | 0   | <b>æ</b>    | 55                   |
| NEMERTINEA                            |                       | Ŋ         | 0   | 22          | 186                  |
| NEMATODA                              |                       | 81        | LT. | 181         |                      |
| OLIGOCHAETA<br>SPIROSPERMA            |                       |           |     |             | 2                    |
|                                       |                       | -         | 0   | 0           |                      |
| STYLARIA                              |                       | 0         | 0   | <b>6</b> 0  |                      |
| OTHER ALL DITORGETTE                  |                       | 8         | c   | -           |                      |
| ALE ULIGOCHPEIA                       |                       | ŗ         | ,   | -           | <b>8</b> 3           |
| MANAYUNKIA SPECIOSA                   |                       | ō         |     | (           | į                    |
| ALL POLYCHAETA                        |                       |           | >   | >           | 62                   |
| COPEPODA                              |                       |           |     |             | 62                   |
| LIMNOCALANUS                          |                       | 0         | 8   | 0           | 14                   |
| ALL COPEPUDA                          |                       |           |     |             | : ;                  |

| MACROZOOBENTHOS PUNAR GRAB COUNT DATA |      |             |    | 10/19/83      | 83          |
|---------------------------------------|------|-------------|----|---------------|-------------|
| TRANSECT 20 STATION 3 (CONT'D)        | GRAB | GRAB COUNTS | 2  | ESTIMATED     | 60          |
| - AXON                                | - 1  | 2           | 6  | NO./SQ. METER | METER       |
| EPHEMEROPTERA<br>BAETISCIDAE          |      |             |    |               | !<br>!<br>! |
| BAETISCA                              | -    | 0           | 8  |               |             |
| ALL EPHEMEROPTERA                     |      |             |    | 21            |             |
| TRICHOPTERA                           |      |             |    |               |             |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE      | =    | 4           | 27 |               |             |
| HYDROPSYCHE                           | 0    | c           | Ľ  |               |             |
| AL TRICUPIES                          |      | •           | )  | Ċ             |             |
| ALL INICAGE ENA                       |      |             |    | 33)           |             |
| GASTROPODA                            |      |             |    |               |             |
| ELIMIA LIVESCENS                      | •    | 8           | ī. |               |             |
|                                       | •    | c           |    |               |             |
|                                       | >    | >           | •  |               |             |
| ALL GASTROPODA                        |      |             |    | 152           |             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | T DATA |             |            | 10/19/83                |
|---------------------------------------|--------|-------------|------------|-------------------------|
| DETROIT RIVER TRANSECT 21 STATION 1   |        |             |            |                         |
| TAXON                                 |        | GRAB COUNTS | SUNTS<br>3 | ESTIMATED NO./SQ. METER |
| RHABDOCOELA                           | 12     | 72          | 47         | 902                     |
| TRICLADIDA                            | •      | 0           | 0          | 7                       |
| NEMERTINEA                            | 43     | 115         | 3          | 1302                    |
| NEMATODA                              | 155    | <b>106</b>  | 112        | 2569                    |
| OLIGOCHAETA<br>NAIS                   | 0      | 6           | 0          |                         |
| SPIROSPERMA                           | 110    | 121         | 29         |                         |
| STYLARIA                              | 12     | 51          | 32         |                         |
| OTHER<br>ALL OLIGOCHAETA              | 210    | 142         | 104        | 6088                    |
| POLYCHAETA<br>Manayunkia speciosa     | 308    | 866         | 256        | 0<br>0<br>4<br>0        |
| ALL POLYCHAETA                        |        |             | }          | 0<br>0<br>0<br>0        |
| CLADOCERA<br>SIDA CRYSTALLINA         | 0      | 8           | 0          | 4                       |
| ت                                     |        |             |            | 4                       |
| COPEPODA .<br>Macrocyclops            | c      | 76          | •          |                         |
| ALL COPEPODA                          | •      | •           | •          | 9 9                     |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA           |           |             |          | 10/19/83   |
|---|-----------|-------------|----------|--|
| TRANSECT 21 STATION 1 (CONT'D)                  |           | į           | į        |  |
| TAXON   | GRAE<br>- | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER   |
| AMPHIPODA<br>GAMMARUS                           | -         | 7           | -        | ;<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| HYALELLA AZTECA                                 | -         | 0           | 0        |  |
| ALL AMPHIPODA                                   |           |             |          | 34   |
| TERRESTRIAL INSECT                              | 0         | 0           | -        | ٠  |
| DIPTERA<br>CHIRONOMIDAE                         | =         | 25          | 35       | 482  |
| EPHEMEROPTERA<br>Ephemeridae<br>Mexagenia       | 0         | -           | ٥        |  |
| BAETISCIDAE<br>BAETISCA                         | 0         | 0           | -        |  |
| ALL EPHEMEROPTERA                               |           |             |          | 7  |
| LEPIDOPTERA                                     | -         | ٥           | 0        | 7  |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | ç         | 0           | 8        |  |
| HYDROPSYCHE                                     | 5         |             | 28       | •  |
| LEPTOCERIDAE<br>OECETIS                         | 0         | €0          | 0        |  |
| POLYCENTROPODIDAE<br>NEURECLIPSIS               | <b>.</b>  | 4           | 23       |  |
|   | 0         | 0           | -        |  |
| ALL TRICHOPTERA                                 |           |             |          | 744  |

| TRANSECT 21 STATION 1 (CONT'D)          |     |             |      |               |
|---|-----|-------------|------|---------------|
| TAXON                                   | GR. | GRAB COUNTS | JNTS | ESTIMATED     |
| 111111111111111111111111111111111111111 | -   | ~           | က    | NO./SQ. METER |
| ACARINA                                 | 0   | 6           | 6    | 83            |
| GASTROPODA                              |     |             |      |               |
| AMNICOLA                                | 11  | 23          | =    |               |
| * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | •   | ;           | :    |               |
| CAMPELOMA                               | o   | 0           | c    |               |
|   | •   | ,           | >    |               |
| ELIMIA LIVESCENS                        | 0   | -           | -    |               |
| ****************                        |     |             |      |               |
| FERISSIA                                | 0   | c           | ٦    |               |
|   | •   | •           | r    |               |
| GYRAULUS                                | o   | c           | -    |               |
|   | •   | •           | -    |               |
| PHYSA                                   | c   | ď           | :    |               |
|   | •   | ,           | :    |               |
| ALL GASTROPODA                          |     |             |      | 468           |
| PELECYPODA                              |     |             |      |               |
| SPRACKI IDAE<br>PISIDIUM                | ţ   | •           | ;    |               |
|   | ř   | Ž,          | 9    | 737           |
|   |     |             |      |               |
| LAMPSILIS RADIATA SILIQUOIDEA           | 0   | 0           | -    |               |
|   |     |             |      |               |
| ALL PELECYPODA                          |     |             |      |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |          | 10/19/83                   |
|---------------------------------------|------|-------------|----------|----------------------------|
| DETROIT RIVER TRANSECT 21 STATION 2   | GRAI | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                           | =    | 100         | 16       | 220                        |
| TRICLADIDA                            | ო    | 0           | 0        | 21                         |
| NEWERTINEA                            | 68   | 66          | 29       | 1350                       |
| NEMATODA                              | 9    | 0           | 0        | 110                        |
| OLIGOCHAETA<br>Spirosperma            | *    | ٥           | g        |                            |
| OTHER<br>ALL OLIGOCHAETA              | 118  | <b>6</b>    | 6        | 1914                       |
| POLYCHAETA<br>Manayunkia speciosa     | 32   | 8           | 26       | 937                        |
| ALL POLYCHAETA                        |      |             |          | 937                        |
| COPEPODA<br>EURYTEMORA                | 5    | 0           | 0        |                            |
| HARPACTICOIDA                         | 9    | 0           | 0        |                            |
| ALL COPEPODA                          |      |             |          | 220                        |
| AMPHI PODA<br>GAMMARUS                | 0    | -           | 0        |                            |
| HYALELLA AZTECA                       | -    | 0           | 0        |                            |
|                                       |      |             |          | *                          |

B-339

| TRANSECT 21 STATION 2 (CONT'D)    | 9400       | STANDO GAGO | 9 1 | Cattanting    |
|-----------------------------------|------------|-------------|-----|---------------|
|                                   | -          | 2           | , m | NO./SQ. METER |
| OIPTERA CALPETERA                 | c          | -           | •   | -             |
| CHINGGAIDAE                       | >          | -           | >   | •             |
| CHADBORUS                         | 0          | -           | 0   |               |
| ALL DIPTERA                       |            |             |     | 14            |
| TRICHOPTERA                       |            |             |     |               |
| POLYCENTROPODIDAE<br>Neureclipsis | -          | 0           | 0   |               |
| ALL TRICHOPTERA                   |            |             |     | ٢             |
| ACARINA                           | -          | 0           | -   | 2             |
| PELECYPODA<br>Sphaeriidae         |            |             |     |               |
| PISIDIUM                          | <b>5</b> 6 | ∞           | •   | 289           |
| ALL PELECYPODA                    |            |             |     | 289           |
|                                   |            |             |     |               |

C

| DETROIT RIVER TRANSECT 21 STATION 3 | GRA       | GRAB COUNTS | NTS | ESTIMATED | TED   |
|-------------------------------------|-----------|-------------|-----|-----------|-------|
| TAXON                               | -         | 7           | 6   | NO./SQ.   | METER |
| RHABDOCOELA                         | 2         | က           | 6   | 52        |       |
| NEMERTINEA                          | 35        | 74          | 72  | 1246      |       |
| NEMATODA                            | 0         | 17          | 0   | 117       |       |
| OLIGOCHAETA<br>Spirosperma          | 7         | 7           | 4   |           |       |
| OTHER<br>ALL OLIGOCHAETA            | 2         | 24          | 49  | 916       |       |
| MANAYUNKIA SPECIOSA                 | <b>10</b> | 96          | 113 | 1887      |       |
| ALL POLYCHAETA                      |           |             |     | 1887      |       |
| COPEPODA DIAPTOMUS                  | 0         | ā           | 0   | 110       |       |
| ALL COPEPODA                        |           |             |     | 110       |       |
| DIPTERA<br>CHIRONOMIDAE             | 0         | 0           | m   | 21        |       |
| G.STROPODA<br>Amicola               | -         | 0           | п   |           |       |
| AISSIA                              | -         | 0           | 0   |           |       |
| ALL GASTROPODA                      |           |             |     | 80        |       |

| 10/19/83  | ESTIMATED<br>NO./SQ. METER   | 337                     |
|---|--|-------------------------|
|   | GRAB COUNTS  | 4 13 32                 |
| MACROZGOBENTHOS PONAR GRAB COUNT DATA<br>TRANSECT 21 STATION 3 (CONT'D) | TAXON GRAB COUNTS ESTIMATED 1 2 3 NO./SQ. METER PELECYPODA SPHAFRITDAE | PISIDIUM ALL PELECYPODA |

| MACRUZUUBENIHUS PUNAR GRAB COUNI DATA |      |              | 5/ 7/84    |
|---------------------------------------|------|--------------|------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 1  | 8492 | SPAR COINTS  | CATTANTED  |
|                                       | -    | 2            | NO./SQ. ME |
| NEMERTINEA                            | 0    | -            | 7 0        |
| NEMATODA                              | 0    | -            | 7 0        |
| COPEPODA<br>CYCLOPS BICUSPIDATUS      | -    | -            | •          |
| DIAPTOMUS                             | 2    | <del>ი</del> |            |
| LIMMOCALANUS                          | -    | -            | ø          |
| ALL COPEPODA                          |      |              | 207        |
| TERRESTRIAL INSECT                    | -    | 0            | ,          |
| DIPTERA<br>CHIRONOMIDAE               | 8    | -            | 78         |
| PELECYPODA<br>Sphaeridae<br>Pisidium  | -    | 0            | 0          |
| * COG > Cu = 14                       |      |              |            |

| MACROZGOBENTHOS PONAR GRAB COUNT DATA   |     |             |     | 7/ 1/84       |
|---|-----|-------------|-----|---------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 2    |     |             |     | *             |
|   | GRA | GRAB COUNTS | NTS | ESTIMATED     |
| COPEDDA                                 | - ¦ | ,           | 5   | NO./SQ. METER |
| CYCLOPS BICUSPIDATUS                    | 0   | -           | c   |               |
| DIAPTOMUS                               | )   | •           | >   |               |
| 1 1 3 6 4 8                             | 4   | 7           | 7   |               |
| LIMNOCALANUS                            | •   | ,           |     |               |
| 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 77  | 0           | ~   |               |
| ALL COPEPODA                            |     |             |     | ,             |
| DIPTERA                                 |     |             |     | 121           |
| CHIRONOMIDAE                            | 7   | e           | R   | Ç             |
| PELECYPODA                              |     | )           | •   | ħ             |
| SPHAERIIDAE                             |     |             |     |               |
|   | 0   | -           | 0   | 7             |
| Alt personna                            |     |             |     | •             |
|   |     |             |     | •             |

13-344

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |            | 5/ 7/84        |
|---------------------------------------|------|-------------|------------|----------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 3  | GRAB | GRAB COUNTS | TS.        | ESTIMATED      |
| NOX                                   | -    | ,           | 9          | NO./SQ. MEIEK  |
| CNIDARIA                              | 0    | 0           | -          | 7              |
| ALL CNIDARIA                          |      |             |            | 7              |
| NEMERTINEA                            | 0    | 0           | -          | •              |
| NEMATODA                              | ٥    | 0           | <b>6</b> 0 | 50<br>20<br>20 |
| OLIGOCHAETA                           | 0    | 0           | 8          | 41             |
| COPEPODA<br>DIAPTOMUS                 | 4    | 8           | 8          |                |
| LIMNOCALANUS                          | 0    | 8           | -          |                |
| ALL COPEPODA                          |      |             |            | 76             |
| OSTRACODA                             | 0    | 0           | -          | •              |
| TERRESTRIAL INSECT                    | -    | 0           | 0          |                |
| DIPTERA<br>CHIRONOMIDAE               | Ξ    | ø           | 59         | 317            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |        |             | 5/ 7/84       |
|---------------------------------------|-----|--------|-------------|---------------|
| ST. CLAIR RIVER TRANSECT 2 STATION t  | æ,  | ¥<br>S | GRAB COUNTS | ESTINATED     |
| TAXON                                 | -   | 8      | 6           | NO./SQ. METER |
| HTHYOMYZON FOSSOR                     | 0   | 0      | -           |               |
| ALL FISH                              |     |        |             | 7             |
| PORIFERA<br>Spongilla                 | 0   | 0      | •           | •             |
| ALL PORIFERA                          |     |        |             | 0             |
| CNIDARIA<br>HYDRA                     | ₩   | 0      | 0           | នា<br>មា      |
| ALL CNIDARIA                          |     |        |             | 10<br>10      |
| RHABDOCDELA                           | 11  | 6      | ÷.          | 241           |
| NEMATODA                              | -   | 0      | 8           | 207           |
| DLIGOCHAETA<br>SPIROSPERMA            | 8   | 46     | 38          |               |
| OTHER<br>ALL DLIGOCHAETA              | 830 | 7 19   | 368         | 14125         |
| COPEPODA DIAPTOMUS                    | •   | 0      | 20          |               |
| HARPACTICOIDA                         | -   | 0      | 0           |               |
| ALL COPEPODA                          |     |        |             | 193           |
| OSTRACODA                             | ~   | -      | N           | 34            |
|                                       |     |        |             |               |

| TRANSECT 2 STATION 1 (CONT'D)         GRAB COUNTS         ESTIMATED           TAXON         1         2         3         NO./5q. MET           ALL AMPHI PODA         2         5         3         AC./5q. MET           ALL AMPHI PODA         0         1         7         7           ALL AMPHI PODA         0         1         7         7           ALL AMPHI PODA         1         1         7         7           ALL ISOPODA         ASELLUS         0         1         7           ALL ISOPODA         ASELLUS         0         0         1         7           ALL ISOPODA         ASELLUS         0         0         0         0         1         7           CERATOROGONIDAE         1         1         1         5         48         76           CHIRONOMIDAE         5         0<  | MACROZOOBENTHOS PONAR GRAB COUNT DATA |       |              |     | 5/ 7/84                                 |
|--|---------------------------------------|-------|--------------|-----|---|
| AZTECA GRAB COUNTS  AZTECA CONTOR  PODA  L INSECT  L INSECT  A ERA  ERA  A ERA  ERA  A ERA  A CONTOR  A CO |                                       |       | į            |     |   |
| AZTECA PODA PODA L INSECT L INSECT C   |                                       |       | <b>AB</b> CO | S E | ESTIMATED<br>NO./SQ. METER              |
| AZTECA 2 5 3 9 1 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0   |                                       | }<br> | 1            | 1   | 1 |
| AZTECA  AZTECA  PODA  L INSECT  L INSECT  CONIDAE  CONIDA | GANNARUS                              | 7     | ເດ           | က   |   |
| PODA  L INSECT  L INSECT  L INSECT  1 1 5  ONIDAE  ONIDAE  AE  RA  AE  RA  AE  RA  AI  AI  AI  AI  AI  AI  AI  AI  AI  | HYALELLA AZTECA                       | 0     | -            | 0   |   |
| DA L INSECT 1 1 5 CONIDAE CONI | ALL AMPHIPODA                         |       |              |     | 76                                      |
| DA L INSECT 1 1 5 CNIDAE CONIDAE CONID | ISOPODA                               |       |              |     |   |
| DA  L INSECT  1 1 5  ONIDAE  ONIDAE  DAE  TA  A  ERA  A  ERA  A  ERA  A  EROPTERA  A  A  A  A  A  A  A  A  A  A  A  A  | ASELLUS                               | 0     | 0            | -   | 7                                       |
| DAE 10 1 1 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | ALL ISOPODA                           |       |              |     | 7                                       |
| ONIDAE 5 0 0 DAE 100 252 49 AE 1 1 0 0 RA 1 1 9 RA AE 3 4 0 ERA AE 3 4 0 EROPTERA 0 2 0 PTERA  | TERRESTRIAL INSECT                    | -     | -            | ľΩ  | 48                                      |
| DALE 100 252 49  AE 100 252 49  AE 1 1 9  RA  ERA  ERA  EROPTERA  I.A. 0 2 0  I.A. 0 2 0  T.E. 0 2 0  A. 0 2 0   | DIPTERA                               |       |              |     |   |
| ERA  ERA  AE  ROPTERA  1 11 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | CERATOPOGONIDAE<br>CHIRONOMIDAE       | က ဝိ  | 252          | 0 6 | 2762                                    |
| ERA ERA AE AC AC EROPTERA AC   | EMPIDIDAE                             | -     | 0            | 0   | 1                                       |
| ERA A  | PSYCHOOLDAE<br>ALL DIPTERA            | -     | =            | တ   | 2947                                    |
| A E  | EPHEMEROPTERA                         |       |              |     |   |
| EROPTERA  EROPTERA  1.A  PTERA  2 0 0  | EPHEMERIDAE<br>Hexagenta              | •     | •            | •   |   |
| EROPTERA  1A  PTERA  2 0 0   |                                       | ,     | •            | >   |   |
| 1A<br><br>PTERA<br>A 2 0 0   | ALL EPHEMEROPTERA                     |       |              |     | 84                                      |
| A 0 2 0 0 TERA 2 0 0   | COLEOPTERA                            |       |              |     |   |
|  | DUBIRAPHIA                            | 0     | 6            | 0   |   |
| 1ERA 2 0 0   |                                       |       |              |     |   |
| 2 0 0  | ALL COLEOPTERA                        |       |              |     | <del>4</del>                            |
|  | LEPIDOPTERA                           | 8     | 0            | 0   | 4                                       |

| A STATION 1 (CONT'D)  GRAB COUNTS ESTIMAT  1 2 1  1 2 1  1 2 1  1 1 0  1 | MACROZOOBENTHOS PONAR GRAB COUNT DATA              |           |                |          | 5/ 7/84                 |
|--|--|-----------|----------------|----------|-------------------------|
| GRAB COUNTS ESTIMAT  ALLOAE  DPSYCHE  1 2 1  CHE  CHE  1 2 1  1 1 0  100 1  | TRANSECT 2 STATION 1 (CONT'D)                      |           |                |          |                         |
| AL CHE   |  | GRAB<br>+ | 200            | NTS<br>3 | ESTIMATED NO./SQ. METER |
| ### COME  #### COME  #### COME  #### COME  #### COME  #### COME  #### COME  ##### COME  ##### COME  ##### COME  ###### COME  ###################################   | IDAE   | -         |                | -        |                         |
| IDAE  IDAE  O 1 0  O 1 0  IDAE  O 0 3  O 0 3  O 0 3  O 0 3  O 0 3  O 0 3  O 0 3  O 0 3  O 0 3  O 0 3  O 0 3  O 0 4  O 0 4  O 0 1 0  O 0 0 1 0  O 0 0 1 0  O 0 0 0 | HYDROPSYCHE  | -         | -              | . 0      |                         |
| O 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | LEPTOCERIDAE<br>MYSTACIDES                         | 0         | . <del>-</del> | •        |                         |
| O 1 0  1951S  OPTERA  3 1 0  86 65 37  O 0 3  2 1 4  OPODA  YPODA  | DECETIS  | 0         | -              | 0        |                         |
| 3 1 0<br>86 65 37<br>0 0 3<br>2 1 4<br>AE<br>AE<br>3 2 3 E   | POLYCENTROPODIDAE<br>NEURECLIPSIS                  | 0         | -              | 0        | ;                       |
| 96 65 37<br>0 0 3<br>2 1 4<br>0P0DA<br>AE<br>3 2 3 E   | ACARINA  | e         | -              | c        | 7 GC                    |
| 0 0 3 2 1 4 0P0DA AE 3 2 3 YP0DA   | GASTROPODA<br>AMVICOLA<br>                         |           | . 10<br>10     | 37       | 3                       |
| 2 1 4 OPODA AE 3 2 3 YPODA   | GYRAULUS   | 0         | 0              | 6        |                         |
| OPODA AE 3 2 3 YPODA   | PHYSA  | 8         | -              | 4        |                         |
| AE<br>3 2 3<br>YPODA   | ALL GASTROPODA                                     |           |                |          | 1432                    |
|  | PELECYPODA<br>S <sup>o</sup> haeriidae<br>Pisidium | m         | ~              | e        | ŭ<br>L                  |
|  | ALL PELECYPODA                                     | 1         | ı              | )        | ) (f                    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |    |                      |    | 5/ 7/84                    |
|--|----|----------------------|----|----------------------------|
| ST. CLAIR RIVER TRANSECT 2 STATION 2 TAXON |    | GRAB COUNTS<br>1 2 3 | 33 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                          | 12 | 15                   | 80 | 241                        |
| ALL CNIDARIA                               |    |                      |    | 241                        |
| RHABDOCOELA                                | -  | 4                    | -  | 4                          |
| TRICLADIDA                                 | -  | Ξ                    | 0  | 83                         |
| NEMERTINEA                                 | N. | ru.                  | 0  | 69                         |
| NEMATODA                                   | ō  | ट                    | 32 | 393                        |
| DLIGOCHAETA<br>Nais                        | 0  | 4                    | 6  |                            |
| SPIROSPERMA                                | 16 | 23                   | 6  |                            |
| OTHER<br>ALL OLIGOCHAETA                   | 58 | 92                   | 37 | 1357                       |
| CLADOCERA<br>DAPHNIA                       | 0  | 0                    | -  |                            |
| ILYOCRYPTUS                                | 0  | 0                    | -  |                            |
| ALL CLADOCERA                              |    |                      |    | 4                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA               |              |      |          | 5/ 7/84       |
|---|--------------|------|----------|---------------|
| TRANSECT 2 STATION 2 (CONT'D)                       | 6            | 9400 | 9 1      |               |
|   | -            | 3 %  | n en     | NO./SQ. METER |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                    | 4            | 8    | ٥        |               |
| DIAPTOMUS   | 58           | 0    | ø        |               |
| HARPACTICOIDA                                       | ø            | 7    | 34       |               |
| LIMNOCALANUS  | <b>L</b> O   | -    | ٥        |               |
| ALL COPEDODA  |              |      |          | 647           |
| DECAPODA ORCOMECTES                                 | -            | 0    | •        |               |
| AMPHI PODA<br>GAMMARUS                              | •            | 5    | <b>I</b> |               |
| HVALELLA AZTECA                                     | •            | ø    | 9        |               |
| ¥ 100   |              |      |          | 317           |
| TERRESTRIAL INSECT                                  | 0            | -    | -        | 7             |
| DIPTERA<br>CHIROMOMIDAE<br>EMPIDIDAE<br>BEYCHMOTOAE | <b>4</b> 8 0 | 322  | 167<br>5 | 3946          |
| ALL DIPTERA   | •            | •    | -        | 4029          |

|   |              |             |     | 90///6                                  |
|---|--------------|-------------|-----|---|
| TRANSECT 2 STATION 2 (CONT'D)             |              |             |     |   |
|   | GRAE<br>+    | GRAB COUNTS | 3 5 | ESTIMATED<br>NO./SQ. METER              |
| EPHEMEROPTERA                             | ;<br>;<br>;  | 1           |     | 1 |
| CAENIDAE                                  |              |             |     |   |
| CAENIS                                    | ō            | 11          | တ   |   |
| 4 C C C C C C C C C C C C C C C C C C C   |              |             |     |   |
| AFKAGEN-1046                              | •            | •           | ,   |   |
|   | •            | -           | 7   |   |
| EPHEMERELLIDAE                            |              |             |     |   |
| EPHEMERELLA                               | 0            | 0           | 0   |   |
| 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7   |              |             |     |   |
| BAETISCIDAE                               |              |             |     |   |
| BAETISCA                                  | -            | 0           | -   |   |
|   |              |             |     |   |
| ALL EPHEMEKOPIEKA                         |              |             |     | 324                                     |
| COLEOPTERA                                |              |             |     |   |
| ELMIDAE                                   |              |             |     |   |
| DUBIRAPHIA                                | m            | 9           | W.  |   |
| #   9   1   1   1   1   1   1   1   1   1 | •            | ,           | ,   |   |
| ALL COLEOPTERA                            |              |             |     | 110                                     |
| TRICHOPTERA                               |              |             |     |   |
| BRACHYCENTOTORE                           |              |             |     |   |
| BRACHYCENTRUS                             | 8            | ĸ           | -   |   |
|   |              |             |     |   |
| HYDROPSYCHIDAE                            |              |             |     |   |
| CHEUMATOPSYCHE                            | <del>-</del> | 20          | 4   |   |
| HYDROPSYCHE                               | =            | 61          | 7   |   |
|   |              |             |     |   |
| HYDROPTILIOAE                             | -            | 0           | 0   |   |
| LEF IUCEXIUAE<br>DECETIO                  | c            | •           | •   |   |
|   | >            | >           | _   |   |
| POLYCENTROPODIDAE                         |              |             |     |   |
| NEURECL I PSIS                            | က            | 7           | 7   |   |
| ALL TRICHOPTERA                           |              |             |     | 798                                     |
|   |              |             |     | •                                       |
| PLECOPTERA                                | -            | 0           | 0   | 7                                       |
| ACARINA                                   | σ            | Ξ           | 17  | 255                                     |
|   | )            |             |     | )                                       |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |      |             |          | 5/ 7/84   |
|---------------------------------------|------|-------------|----------|---|
| TRANSECT 2 STATION 2 (CONT'D)         |      |             |          |   |
|                                       | - GR | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER                                 |
| GASTROPODA ANNICOLA                   | Ç.   | 1           | 47.      | 8 5 8 8 8 8 7 7 8 6 1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 |
| ELIMIA LIVESCENS                      | 64   |             | 2        |   |
| THE SOLA                              | 8    | ~           | -        |   |
| LYMMAEA                               | 0    | ٥           | -        |   |
| PHYSA                                 | n    | Ξ           | 8        |   |
| ALL GASTROPODA                        |      |             |          | 2197  |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | ۰    | ^           | 8        | 124   |
| ALL PELECYPODA                        |      |             |          | 701   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |                |             |            | 5/ 7/84                    |
|--|----------------|-------------|------------|----------------------------|
| ST. CLAIR RIVER TRANSECT 2 STATION 3 TAXON | GRAE           | GRAB COUNTS | S E        | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                          | 60             | 37          | 10         | 344                        |
| ALL CNIDARIA                               |                |             |            | 344                        |
| RHABDOCDELA                                | -              | 8           | 0          | 21                         |
| TRICLADIDA                                 | -              | -           | 0          | 7                          |
| NEMERTINEA                                 | 8              | <b>K</b> D  | -          | io<br>Ro                   |
| NEMATODA                                   | <del>1</del> 3 | 12          | O)         | 234                        |
| OLIGOCHAETA<br>Spirosperma                 | 4              | 2           | Ξ          |                            |
| OTHER<br>ALL OLIGOCHAETA                   | 96             | 92          | 83         | 1756                       |
| POLYCHAETA MANAYUNKIA SPECIOSA             | ٥              | 0           | -          |                            |
| COPEPODA<br>DIAPTOMJS                      | 9              | 7           | 8          |                            |
| HARPACTICOIDA                              | 9              | 6           | •          |                            |
| LIMNOCALANUS                               | ~              | •           | <b>E</b> D | <u>6</u>                   |
|  |                |             |            |                            |

| •                             |           |             |             |               |
|-------------------------------|-----------|-------------|-------------|---------------|
| TRANSECT 2 STATION 3 (CONT'D) | Voc       | STAIL CAMPT | Z Z         | COTTANTED     |
| TAXON                         | -         | 8 8         | 00          | NO./SQ. METER |
| OSTRACODA                     | -         | 7           | -           | 28            |
| AMPHIPODA<br>GAMMADIS         | ç         |             | c           |               |
|                               | 2         |             | >           |               |
| HYALELLA AZTECA               | 11        | ŧ           | =           |               |
| ā                             |           |             |             | 134           |
| TERRESTRIAL INSECT            | ю         | 0           | 0           | 2             |
| DIPTERA                       | ,         |             | ·           | !             |
| CHIRDNOMIDAE<br>EMBIDIAE      | 20<br>204 | 176         | - 18<br>- 4 | 3863          |
| ALL DIPTERA                   | •         | :           | •           | 4008          |
| EPHEMEROPTERA                 |           |             |             |               |
| CAENIDAE                      |           |             |             |               |
| CAENIS                        | 9         | <b>8</b>    | 9           |               |
|                               |           |             |             |               |
| TYPETER IDAE<br>YEXAGENIA     | 0         | ΙΩ          | -           |               |
| f = 9 } L 9 # P 9             | ,         |             |             |               |
| EPHEMERELLIDAE<br>Eburmadelia | -         | ·           | c           |               |
|                               | •         | 4           | )           |               |
| HEPTAGENI IDAE                |           |             |             |               |
| STENDNEMA                     | 0         | -           | 0           |               |
| * 1 * 3 & * 1 * 9 & *         |           |             |             | . !           |
| ALL EPHEMEROPTERA             |           |             |             | 331           |
| COLEOPTERA                    |           |             |             |               |
| ELMIDAE<br>Curtos de abuta    | •         | -           | •           | •             |
|                               | •         | •           | ,           |               |
|                               |           |             |             |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |    |             |           | 5/ 7/84                               |
|---------------------------------------|----|-------------|-----------|---------------------------------------|
| TRANSECT 2 STATION 3 (CONT'D)         | S. | GRAB COUNTS | STAL      | ESTIMATED                             |
| TAXON                                 | -  | 7           | ന         | NO./SO. METER                         |
| a × f                                 | 0  | 0           | -         | • • • • • • • • • • • • • • • • • • • |
| HYDROPSYCHIDAE                        | Ø  | 20          | 8         |                                       |
| HYDROPSYCHE                           | φ  | 5           | -         |                                       |
| RHYACOPHILIDAE                        | 8  | -           | 6         |                                       |
| ALL TRICHOPTERA                       |    |             |           | 413                                   |
| PLECOPTERA                            | 0  | -           | 0         | 7                                     |
| ACARINA                               | 9  | 27          | 7         | 275                                   |
| GASTROPODA<br>Amnicola                | Ø  | 9           | 7         |                                       |
| ; ~                                   | 40 | 86          | 32        |                                       |
| LYMNAEA                               | 0  | -           | 0         |                                       |
| APHYSA                                | 0  | -           | -         |                                       |
|                                       | -  | -           | 0         | •                                     |
| ALL GASTROPUDA                        |    |             |           | 1439                                  |
| PELECYPODA<br>SPHAERIIDAE             |    | ı           | ,         |                                       |
|                                       | -  | it.         | <b>60</b> |                                       |
| SPHAERIUM                             | 0  | 8           | 0         |                                       |
| ALL SPHAERIDAE ALL DESERVEDAE         |    |             |           | 01.                                   |
| ALL PETECITODA                        |    |             |           | 2                                     |

(

| ST. CLAIR RIVER TRANSECT 3 STATION 1 | GRAB COUNTS | no: | NTS | ESTIMATED     |
|--------------------------------------|-------------|-----|-----|---------------|
|                                      | -           | ~   | 6   | NO./SQ. METER |
| /<br>                                |             |     |     |               |
| FISH EGGS                            | 0           | 0   | -   | 7             |
| 9 9 9 1 1 2 1                        |             |     |     |               |
| ALL FISH                             |             |     |     | ,             |
| CNIDARIA                             |             |     |     |               |
| HYDRA                                | -           | 0   | -   | 7             |
| ALL CNIDARIA                         |             |     |     | 7             |
|                                      |             |     |     |               |
| COPERODA CYCLOPS BICUSPIDATUS        | •           | 0   | 4   |               |
| DIAPTOMUS                            | <b>78</b>   | 4   | 8   |               |
| ALL COPEPODA                         |             |     |     | 413           |
| ▼G0d Hd₩                             |             |     |     |               |
| GAIMMARUS                            | 0           | 0   | -   | 7             |
| ALL AMPHIPODA                        |             |     |     | 7             |
|                                      |             |     |     | 4             |
| CHIRONOMIDAE                         | ō           | 9   | 7   | 269           |
| EMPIDIDAE                            | 0           | -   | 0   |               |
| ALL DIPTERA                          |             |     |     | 275           |
| EPHEMEROPTERA                        |             |     |     |               |
| CAENIDAE                             |             |     |     |               |
| CAENIS                               | 0           | 0   | -   |               |
| ALL EPHEMEROPTERA                    |             |     |     | r             |
| 1010100160                           |             |     |     |               |
| LEPTOCERIDAE                         |             |     |     |               |
| CERACLEA                             | -           | 0   | 0   |               |
| ALL TRICHOPIERA                      |             |     |     | <b>r-</b>     |
|                                      | •           | (   | (   | •             |
| ACARINA                              | ~           | 2   | >   | •             |

| ST. CLAIR RIVER TRANSECT 3 STATION TAXON | N  | GRAB COUNTS    | STNL<br>3      | ESTIMATED<br>NO./SQ. METER |
|--|----|----------------|----------------|----------------------------|
| •  | -  | 0              | 0              | 7                          |
| ALL FISH                                 |    |                |                | 7                          |
| CNIDARIA<br>Hydra                        | -  | -              |                | 21                         |
| ALL CNIDARIA                             |    |                |                | 24                         |
| COPEPUDA<br>CYCLOPS BICUSPIDATUS         | -  | -              | -              |                            |
| DIAPTOMUS                                | ហ  | 0              | <del>1</del> 3 |                            |
| LIMMOCALANUS                             | -  | 0              | 0              |                            |
| ALL COPEPODA                             |    |                |                | 152                        |
| TERRESTRIAL INSECT                       | -  | 0              | ٥              | •                          |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE     | 32 | <del>.</del> - | 2° 0           | 455                        |
| ALL DIPTERA                              |    |                |                | 496                        |
| ACARINA                                  | -  | 0              | -              | 14                         |
| GASTROPODA<br>ELIMIA LIVESCENS           | 0  | 8              | -              | . 58                       |
| -  |    |                |                | 2                          |
| PELECYPODA<br>SPHAERIDAE<br>PISIDIUM     | -  | ø              | 0              | <b>4</b>                   |
|  |    | 1              | )              | : ;                        |

(

| A A A A A A A A A A A A A A A A A A A  |                 |           |       |    |     | •  |
|--|-----------------|-----------|-------|----|-----|--|
| 1 2 3 NO. /50.  1A  1A  1A  1A  1A  1A  1A  1A  1A  1  | ST. CLAIR RIVER | 3 STATION | g A G | 5  | Z Z | ECTIMATED                                      |
| 1A  NUS  AZTECA  AE  54 33 40  AE  10 0 2  10 0 1 39  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  10 0 1 29  | 1               |           | -     | 7  | 6   | NO./SQ. METER                                  |
| IA 0 2 2 0 1 3 2 0 1 29  | FISH            |           |       |    |     | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
| 1A 0 2 2 0 1 3 2 0 1 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4   | FISH EGGS       |           | -     | -  | -   | 21   |
| 1A  NUS  AZTECA  AE  SA 33 40  AE  | ALL FISH        |           |       |    |     | 21   |
| 1A  NUS  AZTECA  AE  54 33 40  AE  | CNIDARIA        |           |       |    |     |  |
| AZTECA  AZTECA  AE  S4 33 40  AE   | HYDRA           |           | 0     | 0  | 8   | <b>:</b>                                       |
| MUS 30 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4   | ALL CNIDARIA    |           |       |    |     | 7  |
| AZTECA  AZTECA  AE  52 0 1  6 1 29  7 0 1  7 0 1  7 0 0  7 | TRICLADIDA      |           | 0     | -  | 6   | 28   |
| 30 4 4  MUS  T 0 1  DA  AZTECA  T 0 0  AZTECA  T 0 0  T 0  | NEMATODA        |           | 8     | 0  | -   | 21   |
| #US 30 4 4  ALANUS  EPODA  LA AZTECA  1 0 0  LA AZTECA  1 0 0  MIDAE  MIDAE  54 33 40  A 6   | OLIGOCHAETA     |           | 0     | -  | 58  | 207  |
| DMUS   | COPEPODA        |           |       |    |     |  |
| CALANUS  PEPODA  DA  DA  LLA AZTECA  PHIPODA  OMIDAE  DAE  1 0 0  1 0 0  1 1 0 0   | DIAPTOMUS       |           | 9     | 4  | 4   |  |
| DA RUS 2 0 0 CLLA AZTECA 1 0 0 PHIPODA 54 33 40 DAE 0 1 1  | LIMNOCALANUS    |           | -     | ٥  | -   |  |
| DA   | ALL COPEPODA    |           |       |    |     | 275  |
| MIDAE 54 33 40   | AMPHIPODA       |           |       |    |     |  |
| LLA AZTECA 1 0 0 LLA AZTECA 1 0 0 PHIPODA OMIDAE 54 33 40 DAE 0 1 1  | GAMMARUS        |           | 7     | 0  | 0   |  |
| PHIPODA  OMIDAE 54 33 40  DAE 0 1 1  | HYALELLA AZTECA |           | -     | 0  | o   |  |
| OMIDAE 54 33 40  | ALL AMPHIPODA   |           |       |    |     | 21   |
| 54 33 40   | DIPTERA         |           |       |    |     |  |
| 0  | CHIRONOMIDAE    |           | 54    | 33 | 9   | 875  |
|  | EMPIDIDAE       |           | 0     | -  | -   |  |

| TRANSECT 3 STATION 3 (CONT'D)  GRAB COUNTS  TAXON  EPHEMERRELLA  EPHEMERRELLIDAE  EPHEMERRELLIDAE  EPHEMERRELLIDAE  EPHEMERRELLA  BAETISCIDAE  BAETISCA  ALL EPHEMERROPTERA  TRICHOPTERA  HYDROPSYCHE  H | MACKUZUUBENIHUS PUNAK GRAB CUUNT DATA |      |     |                  | 5/ 7/84   |
|--|---------------------------------------|------|-----|------------------|---|
| AE  AE  CHE  CHE  CHE  CHE  CO 0 6  1 71  1 71  SCENS  SOENS  DA   |                                       | 9400 | į   | 0 114            | 2000  |
| AE CHE CHE CHE CHE CHE CHE CHE CHE CHE CH  | TAXON                                 |      | 5 ~ | n en             | NO./SQ. METER   |
| ### 0 0 6  #############################   | EPHEMEROPIERA<br>EPHEMERELLIDAE       |      |     | 1<br>f<br>l<br>l | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| AE EROPTERA 2 0 0 1 1 1 71 1 1 71 1 1 71 1 1 71 1 1 71 1 1 71 1 1 71 1 1 71 1 1 71 1 1 71 1 | EPHEMERELLA                           | 0    | 0   | ø                |   |
| EROPTERA  A HIDAE PSYCHE CHE CHE CHE CHE CHE CHE CHE CHE CHE   | BAETISCIDAE                           |      |     |                  |   |
| HIDAE HIDAE PSYCHE CHE CHE CHE CHE CHE CHE CHE CHE CHE   | BAETISCA                              | 8    | 0   | 0                |   |
| HIDAE PSYCHE O 0 1 CHE   | ALL EPHEMEROPTERA                     |      |     |                  | 55  |
| PSYCHE  CHE  CHE  CHE  DAE  ES  LIDAE  LA  OPTERA  OPTERA  OPTODA  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0   | TRICHOPTERA                           |      |     |                  |   |
| CHE DAE ES CIDAE OPTERA OPTERA OPODA 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0   | CHEUMATOPSYCHE                        | •    | 0   | -                |   |
| DAE ES   | HYDROPSYCHE                           | -    | -   | 11               |   |
| LIDAE LIDAE LA OPTERA OPTERA OPTERA OPODA  | LEPTOCERIDAE                          |      |     |                  |   |
| LIDAE LA OPTERA OPTERA OPTERA OO 1 OPTERA OO 0 OPTERA OO 0   | MYSTACIDES                            | -    | 0   | 0                |   |
| OPTERA  OPTERA  OPTERA  O 1 0  1  O 1 0  1  IVESCENS  31 12 16  1 0 0  0PODA   | RHYACOPHILIDAE                        |      |     |                  |   |
| OPTERA  O 0 1  IVESCENS  31 12 16  1 0 0   | PROTOPTILA                            | 0    | -   | 0                |   |
| 1VESCENS 31 12 16 1 0 0 0 0 0 00000  | ALL TRICHOPTERA                       |      |     |                  | 523   |
| 1VESCENS 31 12 16  |                                       | 0    | 0   | -                | 7   |
| 0  | GASTROPODA<br>. ELIMIA LIVESCENS      | 31   | 2   | 9                |   |
|  | GYRAULUS                              | -    | 0   | 0                |   |
|  | ALL GASTROPODA                        |      |     |                  | 413   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA  | DATA             |            |             |          | 5/8/84                     |
|--|------------------|------------|-------------|----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 4 ST<br>TAXON | 4 STATION 1      | GRAB<br>1  | GRAB COUNTS | S TS     | ESTIMATED<br>NO./SQ. METER |
| FISH<br>FISH EGGS                      | ;<br>;<br>;<br>; | 0          | 0           | -        |                            |
| ALL FISH                               |                  |            |             |          | 7                          |
| CNIDARIA<br>HYDRA                      |                  | 0          | 8           | 0        | ‡                          |
| ALL CNIDARIA                           |                  |            |             |          | 4                          |
| TRICLADIDA                             |                  | 0          | -           | 0        | 7                          |
| NEMATODA                               |                  | 33         | 88          | 69       | 1102                       |
| HIRUDINEA<br>ERPOBDELLIDAE             |                  | 0          | 6           | 0        | 21                         |
| OL I GOCHAETA<br>SPI ROSPERMA          |                  | <b>3</b> 6 | 6           | 30       |                            |
| OTHER<br>ALL OLIGOCHAETA               |                  | 23         | 0           | 27       | 1467                       |
| COPEPODA<br>DIAPTOMUS                  |                  | 8          | 4           | 6        |                            |
| LIMMOCALANUS                           |                  | 7          | -           | 6        | 103                        |
| OSTRACODA                              |                  | 0          | 0           | <b>+</b> | ٢                          |

| TAXON                                   |      |       |     |                                       |
|---|------|-------|-----|---------------------------------------|
| 1 | GRAE | COC   | NTS | ESTIMATED                             |
|   |      | 1 2 3 | 6   | NO. / SQ. METER                       |
| AMPHIPODA<br>Hyalella Azteca            | ٥    | 0     | -   | · · · · · · · · · · · · · · · · · · · |
| ALL AMPHIDODA                           |      |       |     | ,                                     |
| DIPTERA                                 |      |       |     |                                       |
| CHIRONDRIDAE                            | Ξ    | 2     | 7   | 269                                   |
| EPHEMEROPTERA                           |      |       |     |                                       |
| CAENIS                                  | 0    | -     | 0   |                                       |
| EPHESERIDAE                             |      |       |     |                                       |
| HEXAGENIA                               | 0    | ٥.    | 0   |                                       |
| ALL EPHEMEROPTERA                       |      |       |     | 21                                    |
| TRICHOPTERA                             |      |       |     |                                       |
| HYDROPSYCHIDAE                          |      |       |     |                                       |
| CHEUMATOPSYCHE                          | 0    | 0     | -   |                                       |
| ALL TRICHOPTERA                         |      |       |     | -                                     |
| ACARINA                                 | ٥    | ო     | 0   | 21                                    |
| GASTROPODA                              |      |       |     |                                       |
| AMMICOLA                                | 38   | 20    | 27  |                                       |
| ELIMIA LIVESCENS                        | -    | 8     | o,  |                                       |
|   | 0    | 0     | 8   |                                       |
| VALVATA SINCERA                         | -    | 0     | 0   |                                       |
|   |      |       |     |                                       |
| VALVATA TRICARINATA                     | 48   | 22    | 25  |                                       |
| $\alpha$                                |      |       |     | 1894                                  |
| PELECYPODA                              |      |       |     |                                       |
| SPHAERIIDAE                             |      |       |     |                                       |
| PISIDIUM                                | 24   | 49    | 04  | 778                                   |
|   |      |       |     |                                       |

| ST. CLAIR RIVER TRANSECT 4 STA                    | 4 STATION 2 |             |            |  |
|---|-------------|-------------|------------|--|
| TAXON   | 8           | GRAB COUNTS | INTS       | ESTIMATED                                      |
|   | -           | 7           | m          | NO./SQ. METER                                  |
| CNIDARIA  |             |             |            | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
|   | 9           | 0           | <b>6</b> 0 | 96   |
| ALL CNIDARIA                                      |             |             |            | 96   |
| RHABDOCOELA                                       |             | (           | (          | 3  |
|   | 12          | <b>10</b>   | 80         | 193  |
| TRICLADIDA  | 0           | 0           | -          | 7  |
| NEMATODA  | 24          | 49          | 125        | 1364   |
| HIRUDINEA   |             |             |            |  |
| ERPOBDELLIDAE<br>Glossiphonitae                   | 0           | 0           | -          |  |
| PLACOBDELLA PAPILLIFERA                           | -           | 0           | 0          |  |
| ALL HIRUDINEA                                     |             |             |            | 7  |
| OLIGOCHAETA                                       |             |             |            |  |
| SIV   | ß           | -           | 7          |  |
| SPIROSPERMA                                       | Ş           | u           | ĉ          |  |
| 2   1   4   9   9   9   1   1   1   1   1   1   1 | ?           | •           | 2          |  |
| OTHER<br>ALL OLIGOCHAETA                          | 237         | 288         | 233        | 5475   |
| COPEPODA  |             |             |            |  |
| DIAPTOMUS   | 6           | 0           | 0          |  |
| 1 11111   | •           | •           | •          |  |
| HARPACTICOIDA                                     | 6           | 0           | 16         |  |
| LIMNDCALANUS                                      | c           | c           | •          |  |
|   | •           | >           | -          |  |
| , 10000000  |             |             |            |  |

| TRANSECT 4 STATION 2 (CONT'D)  GRAB COUNTS  TAXON  GAMMARUS  GAMMARUS  HYALELLA AZTECA  GAMMARUS  TERRESTRIAL INSECT  DIPTERA  GERATOPOGENIA  CHIRONOMIDAE  CAENIDAE  HEXAGENIA  HEXAGENIA  HEXAGENIA  HEXAGENIA  HEXAGENIA  HEYAGENIA  HEYAGENIA  HEYAGENIA  HEYAGENIA  HEYAGENIA  STENOMENA  1 0 0  1 0  1 0  1 0  1 0  1 0  1 0   | MACROZOOBENTHOS PONAR GRAB COUNT DATA    |      |             |           | 5/8/84                     |
|--|--|------|-------------|-----------|----------------------------|
| GRAB COUNTS  1 2 3  1 0 0  14 2 4  14 2 4  16 0 0  18 22 152  0 0 1  1 0 0  1 0 20  1 0 0  1 0 0  1 0 0  |  | 1    |             | !         |                            |
| 14 4 2 4 4 14 2 14 4 2 14 4 2 4 4 4 4 4  | TAXON                                    | 83 ~ | 명<br>일<br>일 | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| 14 4 2 4 4 14 4 2 4 4 14 8 2 4 4 14 8 2 4 14 1   | OSTRACODA                                | -    | 0           | 0         | 7                          |
| 14 2 4 15 0 0 11 18 22 152 2 16 0 0 1 1 0 1 1 0 1 1 0 1 1 1 1 0 1  | AMPHIPODA                                |      |             |           |                            |
| 14 2 11<br>19 0 0 0<br>118 22 152<br>0 0 1<br>1 0 0 1<br>2 0 0 1<br>1 0 0 1  | GAMMARUS                                 | 4    | ~           | 4         |                            |
| 19 0 0 1 1 1 0 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 |  | 7    | 8           | Ξ         |                            |
| 3 0 0<br>118 22 152<br>1 0 0<br>1 0 0<br>1 0 0<br>1 0 0  | PONTOPOREIA HOYI                         | 19   | 0           | 0         |                            |
| 118 22 152 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 1 1 0   | ALL AMPHIPODA                            |      |             |           | 386                        |
| DAE 1188 22 152 0 1 0 0 1 1 0 0 0 1 1 0 20 1 1 0 20 1 1 0 20 1 1 0 0 0 1 0 0 0 1 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0   | TERRESTRIAL INSECT                       | 60   | 0           | 0         | 21                         |
| AE   | DIPTERA                                  | (    | •           |           |                            |
| AE 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | CHIRONOMIDAE                             |      | 200         | 152       | 2011                       |
| AE 3 1 0 20 1  | EMPIDIDAE                                | 0    | 0           | -         |                            |
| A.E. 3 0 1   | ALL DIPTERA                              |      |             |           | 2025                       |
| 1 0 1  IA  ILLIDAE  ELLA  IIDAE  MA  1 0 20  1 0 20  1 0 0 1   | EPHEMEROPTERA                            |      |             |           |                            |
| , , , , , , , , , , , , , , , , , , ,  | CAENIDAE                                 | •    | c           | -         |                            |
| 0 0 0  | 9 1 2 9 4                                | •    | •           | •         |                            |
| 3 0 0 0  | EPHEMERIDAE                              |      |             |           |                            |
| e •  |  | -    | 0           | 20        |                            |
| - 0<br>0 0<br>E +  | EPHEMERELLIDAE                           |      |             |           |                            |
| 0 0  | EPHEMERELLA                              | m    | 0           | -         | ٠                          |
| 0  | HEPTAGENIIDAE                            |      |             |           |                            |
|  | STENDNEMA                                | -    | 0           | 0         |                            |
|  | \$ 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |      |             |           |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |            | 5/8/84        |
|---------------------------------------|------|-------------|------------|---------------|
| TRANSECT 4 STATION 2 (CONT'D)         | GRAE | GRAB COUNTS | NTS        | ESTIMATED     |
| TAXON                                 | -    | 7           | 6          | NO./SQ. METER |
| -                                     | 0    | 6           | 0          | 21            |
| TRICHOPTERA                           |      |             |            |               |
| HYDROPSYCHIDAE                        |      |             |            |               |
| CHEUMATOPSYCHE                        | -    | 0           | 7          |               |
|                                       | •    |             | ı          |               |
| HYDROPSYCHE                           | KD.  | -           | m          |               |
| LEPTOCERIDAE                          |      |             |            |               |
| MYSTACIDES                            | -    | 0           | 0          |               |
|                                       |      |             |            |               |
| OECETIS                               | 0    | 0           | -          |               |
|                                       | •    | ,           | •          |               |
| TRIAENODES                            | -    | 0           | N          |               |
| ALL TRICHOPTERA                       |      |             |            | 117           |
| ACARINA                               | 0    | -           | 5          | 179           |
| GASTROPODA                            |      |             |            |               |
| AMVICOLA                              | 34   | 72          | <b>5</b> 6 |               |
|                                       | •    | ,           | ,          |               |
| FLIMIA LIVESCENS                      | >    | -           | •          |               |
| PHYSA                                 | 6    | 0           | 1          |               |
|                                       |      |             |            |               |
| _                                     | -    | 0           | <b>m</b>   |               |
|                                       | ć    | 9           | 6          |               |
|                                       | ž    | 2           | 8          |               |
| æ                                     |      |             |            | 1047          |
| PELECYPODA                            |      |             |            | ٠             |
| SPHAERIIDAE                           |      |             |            |               |
| PISIDIUM                              | 32   | ø           | 2          | 388           |
| ALL PELECYPODA                        |      |             |            | 388           |

| GRAB COUNTS EST 1 2 3 NO.//  D FISH REMAINS  O 1 1 3 7 1 24 4 1 7 24 4 1 6 11 6 11 6 11 6 11 6 11 6 11 6   | MACRUZUUBENIHUS PUNAR GRAB COUNI DAIA |           |    |        | 10/0/0        |
|--|---------------------------------------|-----------|----|--------|---------------|
| TIFIED FISH REMAINS  DARIA  ELA  DARIA  ELA  DA  DA  DA  DA  DA  DA  DA  DA  DA  | TRANSECT 4 STATION                    | GRAE      | 5, | STA    | ESTIMATED     |
| TIFIED FISH REMAINS  DARIA  ELA  DARIA  ELA  DARIA  ELA  DARIA  DA  TICOIDA  TICOIDA | JAN                                   |           | ,  | ,<br>ק | MO./5Q. METER |
| ELA  ELA  DARIA  ELA  DARIA  ELA  DARIA  DARIA  DA  DA  DA  DA  DA  DA  DA  DA  DA   |                                       | •         | •  | •      | ,             |
| ELA  ELA  DARIA  ELA  DARIA  DA  DA  DA  DA  DA  DA  DA  DA  DA  |                                       | >         | >  | -      | •             |
| 1 3 7  |                                       |           |    |        | 7             |
| ELA  ELA  DARIA  ELA  DA  DA  DA  DA  DA  DA  DA  DA  DA   | CNIDARIA                              |           |    |        |               |
| 1A  0 0 1  0 0 1  41 7 24 4  41 7 24 4  41 7 24 4  1 0 3  HAETA  1 CUSPIDATUS  2 0 1  1 CUSPIDATUS  2 0 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  1 O 1  | HYDRA                                 | -         | ო  | 7      | 92            |
| 0 0 1 0 0 1 1 24 4 1 7 24 4 1 0 3 1 0 3 1 0 3 1 0 1 1 0 1 1 0 3 1 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1  | ALL CNIDARIA                          |           |    |        | 76            |
| MA.  41 7 24 4  41 7 24 4  41 7 24 4  41 7 24 4  41 7 24 4  42 7 24 4  43 70 198  1CUSPIDATUS  2 0 1  6 3 0  10 0 1  AUS   | RHABDOCDELA                           | 0         | 0  | -      | 1             |
| 1 0 3 HAETA HAETA HOUSPIDATUS OIDDA HAITA  | TRICLADIDA                            | 0         | 0  | -      | 7             |
| 1 0 3 HAETA HAETA  ICUSPIDATUS 2 0 1  COIDA NUS  ODA   | NEMATODA                              | 4         | 1  | 24     | 486           |
| PERMA  PERMA  1 6 11  COCHAETA  S BICUSPIDATUS  2 0 1  TICOIDA  TICOIDA  ALANUS  0 1 0   | OLIGOCHAETA                           | •         | •  | •      |               |
| BERMA  GOCHAETA  S BICUSPIDATUS  S BICUSPIDATUS  TICOIDA  ALANUS  O 1 0  | CIVE                                  | -         | >  | 2      |               |
| 83 70 198 25 GOCHAETA 25 S BICUSPIDATUS 6 3 0 TICOIDA 0 1 0 ALANUS 0 1 0   | SPIROSPERMA                           | -         | 9  | Ξ      |               |
| S BICUSPIDATUS 2 0 1   | OTHER OTTENDED                        | <b>60</b> | 70 | 198    | 2569          |
| S BICUSPIDATUS 2 0 1   |                                       |           |    |        |               |
| DA 4 0 0 4 4 0 0 4 4 0 0 4 4 0 0 4 4 0 0 4 4 0 0 4 4 0 0 4 4 0 0 0 4 4 0   | CYCLOPS BICUSPIDATUS                  | 8         | 0  | -      |               |
| + 0 0 V  | DIAPTOMUS                             | 9         | က  | 0      |               |
| 0 + 0  | HARPACTICOIDA                         | 0         | 0  | -      |               |
|  | LIMNOCALANUS                          | 0         | -  | 0      |               |
|  | A COORDAY THE                         |           |    |        | 96            |

| T 4 STATION 3 (CONT'D)  GRAB COUNTS  DA  FULL AZTECA  1 0 16  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 7  1 0 0 0 7  1 0 0 0 7  1 0 0 0 7  1 0 0 0 1  1 0 0 0 0   | MACAGEOGRAPIAS POWAR GRAB COUNT DATA    |     |     |                | 5/8/84                                  |
|--|---|-----|-----|----------------|---|
| A AZTECA  AZTECA  1  | 4 STATION 3                             | Č   | 9   |                |   |
| POPE IA AZTECA  LLA AZTECA  LLA AZTECA  LLA AZTECA  LLA AZTECA  LLA AZTECA  1 0 36  POPE IA HOVI  OPPODA  RIAL INSECT  OPODA  OPODA  RIAL INSECT  OPODA  OPODA  OPODA  RIAL INSECT  OPODA  OPODA |   | ¥ - | 5 % | S E            | ESTIMATED<br>NO./SQ. METER              |
| LLA AZTECA  LLA AZTECA  LLA AZTECA  1 0 36  LLA AZTECA  1 0 36  POREIA HOVI  PHIPODA  RIAL INSECT  POGONIDAE  ENTAL  RIAL  RIA | ,                                       |     |     | ;              | 1 |
| LLA AZTECA  LLA AZTECA  LLA AZTECA  POREIA HOVI  PHIPODA  PHIPODA  POREIA HOVI  CHIPODA  RIAL INSECT  CHIPODA  POSONIDAE  CHIPODA  POSONIDAE  CHIPODA  CHIPO |   | N   | 0   | 9              |   |
| POREIA HOYI POREIA HOYI POREIA HOYI PUS  OPODA  RIAL INSECT  OPODA  RIAL INSECT  OPODA  RIAL INSECT  OPODA  RIAL INSECT  OPODA  OPOTERA  RIAL INSECT  OPOTERA  RIAL INSECT  OPOTERA  OPTERA  OPTERA  OPTERA  OPTERA  NELLIDAE  ENTA  ENTA  ENTA  ENTA  ENTA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  ENTA  ENTO  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  INSECT  OPTERA  OPTERA  OPTERA  INSECT  OPTERA  OPTERA  INSECT  INSECT  OPTERA  INSECT  OPTERA  INSECT  INSECT  INSECT  OPTERA  INSECT  INSECT  OPTERA  INSECT  OPTERA  INSECT  INSECT  OPTERA  INSECT  INSECT  OPTERA  INSECT  OPTERA  INSECT  INSEC |   | -   | 0   | 36             |   |
| PHIPODA  US  US  UPODA  RIAL INSECT  OPODA  RIAL INSECT  OPODA  RIAL INSECT  OPOGNIDAE  OMIDAE  PTERA  RIDAE  ENIA  RELLIDAE  ERELLA  HEMEROPTERA  TERA  SYCHIDAE  ATOPSYCHE  FRIDAE  CLIDES  OPOGNIDAE  OPOGNIDA | PONTOPOREIA HOYI                        | 0   | -   | 0              |   |
| 1  | ALL AMPHIPODA                           |     |     |                | 386                                     |
| RIAL INSECT  POGONIDAE  POGONIDAE  PTERA  OPTERA  OPTERA  OPTERA  NIDAE  ENELLIDAE  ENELLA  SYCHIOAE  ATOPSYCHE  PSYCHE  PSYCHE  CLIDES  OPTERA  OPTER | ISOPODA                                 |     |     |                |   |
| ### PTERA   0 0 5 5 181  | ASELLUS                                 | -   | 0   | 0              | 7                                       |
| POGONIDAE  | ALL ISOPODA                             |     |     |                | ۲                                       |
| POGONIDAE  DMIDAE  PTERA  OPTERA  OPTERA  RIDAE  ENIA  RELLIDAE  ENIA  FERELLA  TERA  TERA  SYCHIDAE  PSYCHE  PSYCHE  TERA  TE |   | 0   | 0   | NO.            | 34                                      |
| MAE CHE CHE 0 0 1 0 0 1 1 1 3 0 1 17   | DIPTERA                                 | (   | •   | •              |   |
| PTERA PTERA O 0 1 O 0 2 CHE 1 1 3 O 1 17   | CHIRONOMIDAE<br>ALL DIPTERA             | 99  | 23  | . <del>8</del> | 1859                                    |
| 1DAE LA ROPTERA SYCHE SYCH SYCHE SYCH SYCHE SYCHE SYCHE SYCHE SYCHE SYCHE SYCH SYCH SYCH SYCH SYCH SYC | EPHEMEROPTERA                           |     |     |                |   |
| 1DAE   | EPHEMERIDAE<br>Hexagenia                | 0   | 0   | -              |   |
| LA ROPTERA 0 0 2  TOAE SYCHE 1 1 3  HE 0 1 17  A 6 0 0 1  S 7 0 0 1  S 8 0 0 1   | EPHEMERELLIDAE                          |     |     |                |   |
| TOAE SYCHE 1 1 3 SYCHE 1 1 1 3 SYCHE 0 1 17 AE AE 0 0 1  | EPHEMERELLA                             | 0   | 0   | 8              |   |
| SYCHE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | ALL EPHEMEROPTERA                       |     |     |                | 21                                      |
| 0 0  | TRICHOPTERA                             |     |     |                |   |
| 0 0<br>- 0 0 0   | HYDROPSYCHIDAE                          |     |     |                |   |
| - 0 0<br>0 0   | CHEUMATOPSYCHE                          | -   | _   | e              |   |
| 0 0  | HYDROPSYCHE                             | 0   | -   | 11             |   |
| 0 0  | LEPTOCERIDAE                            |     |     |                |   |
| 0  | MYSTACIDES                              | 0   | 0   | -              |   |
| !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!  | OECETIS                                 | 0   | 0   | -              |   |
|  | : | ,   | ,   |                |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |             |          | 5/8/84                  |
|---------------------------------------|-----------|-------------|----------|-------------------------|
| TRANSECT 4 STATION 3 (CONT'D)         |           |             |          |                         |
| TAXON                                 | GRAB<br>1 | GRAB COUNTS | STI<br>3 | ESTIMATED NO./SQ. METER |
| PLECOPTERA                            | 0         | 0           | -        | 7                       |
| ACARINA                               | -         | 0           | 8        | *                       |
| GASTROPODA                            |           |             |          |                         |
| ANICOLA                               | -         | -           | 7        |                         |
| CAMPELONA                             | -         | 0           | 0        |                         |
| ELIMIA LIVESCENS                      | ø         | 8           | 42       |                         |
| GYRAULUS                              | -         | _           | -        |                         |
| WSAHd                                 | c         | c           | 7        |                         |
| VALUATA TOTCADINATA                   | •         | , (         |          |                         |
| ALL GASTROPODA                        | >         | >           | r        | 777                     |
| PELECYPODA                            |           |             |          | •                       |
| SPHAERIIDAE<br>Pisidium               | 5         | 8           | 10       | 117                     |
| ALL PELECYPODA                        |           |             |          | 117                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | GRAB CC          | OUNT DATA             |                            |             |          | 5/8/84                     |
|---------------------------------------|------------------|-----------------------|----------------------------|-------------|----------|----------------------------|
| ST. CLAIR RIVER TRA                   | TRANSECT         | 5 STATION 1           |                            |             | •        | ı                          |
| TAXON                                 |                  |                       | <u> </u>                   | GRAB COUNTS | STS C    | ESTIMATED<br>NO./SQ. METER |
| FISH                                  | ;<br>;<br>;<br>; | !<br>!<br>!<br>!<br>! | )<br>•<br>•<br>•<br>•<br>• |             | 1        |                            |
| FISH EGGS                             |                  |                       | 0                          | 0           | -        | 7                          |
| ALL FISH                              |                  |                       |                            |             |          | 1                          |
| CNIDARIA                              |                  |                       |                            |             |          |                            |
| HYDRA                                 |                  |                       | 8                          | 0           | ~        | <b>5</b> 8                 |
| ALL CNIDARIA                          |                  |                       |                            |             |          | 28                         |
| NEMATODA                              |                  |                       | 5                          | 16          | 11       | 1267                       |
| OLIGOCHAETA                           |                  |                       |                            |             |          |                            |
| NAIS                                  |                  |                       | -                          | 0           | 0        |                            |
| SPIROSPERMA                           |                  |                       | 21                         | 22          | <u> </u> |                            |
| OTHER                                 |                  |                       | 90                         | -           | ç        |                            |
| ALL DLIGOCHAETA                       |                  |                       | 2                          | !           | 2        | 820                        |
| COPEPODA                              |                  |                       |                            |             |          |                            |
| CYCLOPS BICUSPIDATUS                  |                  |                       | N                          | •           | 0        |                            |
| DIAPTOMUS                             |                  |                       | <b>s</b> n                 | 60          | 6        |                            |
| HARPACTICOIDA                         |                  |                       | -                          | 0           | -        |                            |
| ALL COPEPODA                          |                  |                       |                            |             |          | 193                        |
| AMPHIPODA                             |                  |                       |                            |             |          |                            |
| GAMMARUS                              |                  |                       | 35                         | ø           | 34       | 516                        |
| ALL AMPHIPODA                         |                  |                       |                            |             |          | 516                        |
| TERRESTRIAL INSECT                    |                  |                       | 0                          | ~           | -        | 21                         |

| TDANSECT & STATEM , LOSITATION        |                |             |      |                         |
|---------------------------------------|----------------|-------------|------|-------------------------|
|                                       | <b>&amp;</b> - | GRAB COUNTS | STAC | ESTIMATED NO / SO METER |
| DIPTERA                               |                |             |      |                         |
| CHIROMOMIDAE                          | 183            | Ş           | 11   | 27.00                   |
| EMPIDIDAE                             |                | •           | : 0  | 6177                    |
| ALL DIPTERA                           | •              | •           | •    | 2293                    |
| EPHEMEROPTERA                         |                |             |      |                         |
| CAENIDAE                              |                |             |      |                         |
| CAENIS                                | -              | 0           | 0    |                         |
| * * * * * * *                         |                |             | •    |                         |
| EPHEMERIDAE                           |                |             |      |                         |
| HEXAGENIA                             | ~              | 4           | -    |                         |
| ALL EPHEMEROPTERA                     |                |             |      | iu<br>iu                |
| TRICHOPTEDA                           |                |             |      |                         |
| SDACH CHILL                           |                |             |      |                         |
| BRACHYCENTRUS                         | 7              | c           | c    |                         |
|                                       | •              | •           | •    |                         |
| HYDROPSYCHIDAE                        |                |             |      |                         |
| CHEUMATOPSYCHE                        | -              | 0           | 0    |                         |
|                                       |                |             |      |                         |
| HYDROPSYCHE                           | ~              | 0           | -    |                         |
|                                       |                |             |      |                         |
| LEPTOCERIDAE                          |                |             |      |                         |
| DECETIS                               | -              | ო           | 0    |                         |
| SETONES                               | •              | •           | (    |                         |
|                                       | >              | -           | >    |                         |
| TRIAENODES                            | 4              | c           | c    | •                       |
| , , , , , , , , , , , , , , , , , , , | •              | •           | >    |                         |
| ALL TRICHOPTERA                       |                |             |      | 152                     |
| DDONATA                               |                |             |      |                         |
| COMPHIDAE                             |                |             |      |                         |
| GOMPHUS                               | 0              | 0           | -    | 7                       |
| ALL ODONATA                           |                |             |      | 7                       |
|                                       | •              |             | 1    |                         |
| ACARINA                               | 4              | -           | 0    | 34                      |
|                                       |                |             |      |                         |

| MACKUZUUBENIMOS PONAR GRAB COUNT DATA  |     |             |               | 5/8/84                          |
|--|-----|-------------|---------------|---------------------------------|
| TRANSECT 5 STATION 1 (CONT.O)          |     |             | !             |                                 |
|  | - 8 | GRAB COUNTS | COUNTS<br>2 3 | ESTIMATED NO./SQ. METER         |
| GASTROPODA                             |     | 9           | •             | ;<br>;<br>;<br>;<br>;<br>;<br>; |
|  |     | 2           | 2             |                                 |
| ELIMIA LIVESCENS                       | 57  | 48          | 31            |                                 |
| ************************************** | •   | •           | ,             |                                 |
| ****                                   | 7   | >           | -             |                                 |
| VALVATA TRICARINATA                    | 7   | 25          | 9             |                                 |
| ALL GASTROPODA                         |     |             |               | 1914                            |
| PELECYPODA                             |     |             |               |                                 |
| PISIDIOM                               | 5   | 36          | 22            | 751                             |
| ALL PELECYPODA                         |     |             |               | 751                             |
|  |     |             |               |                                 |

C

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | NAR GRAB C | COUNT DATA  |                  |          |     | 5/8/84        |      |
|---------------------------------------|------------|-------------|------------------|----------|-----|---------------|------|
| ST. CLAIR RIVER                       | TRANSECT   | 5 STATION 2 |                  | <u> </u> | 4   |               | ,    |
| TAXON                                 | :          |             | ¥<br>¥<br>5<br>← | 4 2 3    | 2 6 | NO./SQ. METER | ETER |
| CNIDARIA<br>HYDRA                     |            |             | 7                | 0        | -   | 2.4           |      |
| ALL CNIDARIA                          |            |             |                  |          |     | 5 2           |      |
| NEMATODA                              |            |             | 62               | -        | €   | 489           |      |
| OL I GOCHAETA<br>Nais                 |            |             | 0                | 0        | -   |               |      |
| SPIROSPERMA                           |            |             | <b>.</b>         | n n      | · • |               |      |
| OTHER<br>ALL OLIGOCHAETA              |            |             | 4                | ñ        | 9   | 634           |      |
| CLADOCERA<br>DAPHNIA                  |            |             | -                | 0        | 0   | 7             |      |
| ALL CLADOCERA                         |            |             |                  |          |     | 7             |      |
|                                       | ATUS       |             | ٥                | ın       | 8   |               |      |
| DIAPTOMUS                             | ;<br>!     |             | 7                | 20       | ED. |               |      |
| HARPACTICOIDA                         |            |             | 7                | 0        | 0   |               |      |
| LIMNOCALANUS                          |            |             | 0                | -        | 0   |               |      |
| ALL COPEPODA                          |            |             |                  |          |     | 337           |      |
| AMPHIPODA<br>GAMMARUS                 |            |             | 4                | 0        | 0   | <b>58</b>     |      |
| ALL AMPHIPODA                         |            |             |                  |          |     | <b>58</b>     |      |
| DIPTERA<br>CHIRONOMIDAE               |            |             | 52               | 4        | 0,  | 1143          |      |

|  |                  |      |             |      | 78/X /C     |
|--|------------------|------|-------------|------|-------------|
| TRANSECT 5 STATION 2 (CONT'D)                |                  |      |             |      |             |
| TAXON  |                  | GRA- | GRAB COUNTS | SIND | ESTIMATED   |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>HYDROPSYCHE | •<br>•<br>•<br>• | -    | ·           |      | TOTAL BELEK |
| ALL TRICHOPTERA                              |                  | •    |             | >    | •           |
| ACARINA                                      |                  | 0    | 8           | c    | ` ;         |
| GASTROPODA<br>AMNICOLA                       |                  | •    | 76          | , 5  | !           |
| ELIMIA LIVESCENS                             |                  |      | 9           | )    |             |
| PLEUROCERA ACUTA                             |                  | -    | . 4         | , e  |             |
| ICARI  |                  | 60   | 5           | 6    |             |
| ALL GASTROPODA                               |                  |      |             | )    | 1370        |
| PELECYPODA<br>SPHAERIDAE                     |                  |      |             |      | 2           |
| PISIDIUM                                     | •                | 23   | ñ           | €    | 358         |
| ALL PELECYPODA                               |                  |      |             |      | 356         |

| TRANSECT 5 STATION 3 GRAB COUNTS EST 1 2 3 NO.// 1 0 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 1 0 1   | MACAGODENINGS POWAR GRAD COOKS DATA | A 140 14000 |      |            |     | 2/ 0/04       |
|--|-------------------------------------|-------------|------|------------|-----|---------------|
| HE EGGS HE EGG |                                     | 5 STATION   | 8400 | Š          | Į.  | ESTIMATED     |
| H EGGS H EGGS H E EGG | TAXON                               |             | -    | 3 ~        | n m | NO./SQ. METER |
| ICUSPIDATUS  ICUSP | FISH                                |             |      |            |     |               |
| 1 0 1  ICUSPIDATUS  ICUSPIDATUS | FISH EGGS                           |             | 0    | ~          | -   | 21            |
| ICUSPIDATUS  ICUSP | ALL FISH                            |             |      |            |     | 21            |
| IA ICUSPIDATUS ICU | CNIDARIA                            |             |      |            |     |               |
| IA ICUSPIDATUS ICU | HYDRA                               |             | -    | 0          | -   | 4             |
| ICUSPIDATUS  ICUSP | ALL CNIDARIA                        |             |      |            |     | 4             |
| S BICUSPIDATUS  S BICUSPIDATUS  FOODA  COGONIDAE  MIDAE  ENA  ENERA  FERA  VCHIDAE  SYCHE  SYCHE  SYCHE  TENA  TOPSYCHE  TOPSY | OLIGOCHAETA                         |             | 0    | -          | ო   | 28            |
| PTERA TO O TERA TO O O O O O O O O O O O O O O O O O O   | u                                   |             | •    | c          | •   |               |
| FERA PAE 6 3 4 13 14 15 16 17 17 18 17 18 17 18 17 18 17 18 17 18 18 17 18 17 18 17 18 17 18 17 18 17 18 17 18 17 18 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18   |                                     |             | -    | >          | •   |               |
| E  | DIAPTOMUS                           |             | 9    | m          | 4   |               |
| DAE 0 0 1 1 3 13 13 14 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | LIMNOCALANUS                        |             | ស    | 0          | -   |               |
| DAE 50 0 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0   | ALL COPEPODA                        |             |      |            |     | 145           |
| PTERA 13 13 14 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | DIPTERA                             |             |      |            |     |               |
| PTERA 13   | CERATOPOGONIDAE                     |             | 0    | 0          | -   |               |
| PTERA 1 1 0 0 CHE 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | CHIRONOMIDAE<br>Ali Dibieda         |             | IO.  | <b>6</b> 0 | 5   | 179           |
| PTERA 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |                                     |             |      |            |     | }             |
| ROPTERA  ROPTERA  10 0  1 0 0  HE  1 0 0   | EPYEMEROPIERA<br>Lediacentidae      |             |      |            |     |               |
| 10 AE 1 0 0 SYCHE 1 0 0 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1 1 1 0 0 1  | STENONEMA                           |             | -    | -          | 0   |               |
| 1DAE<br>SYCHE 1 0 0<br>1 0 0 HE 1 0 0  | ALL EPHEMEROPTERA                   |             |      |            |     | <u>*</u>      |
|  | TRICHOPTERA                         |             |      |            |     |               |
| o o  | HYDROPSYCHIDAE                      |             | ,    | •          | •   |               |
| 0 0  | CHEUMATOPSYCHE                      |             | -    | 0          | 0   |               |
|  | HYDROP SYCHE                        |             | -    | 0          | 0   |               |
|  | ALL TRICHOPTERA                     |             |      |            |     | 4             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84 | TRANSECT 5 STATION 3 (CONT'D) | GRAB COUNTS ESTIMATED 1 2 3 NO./SQ. METER | ************************************** |
|---|-------------------------------|---|--|
| MACROZOOBENTHOS PO                            | TRANSECT 5 STATIC             | TAXON                                     | ACABINA                                |

| MACKUZUUBENIHUS PUNAR GRAB COUNT DATA               |          |              |             | 5/8/84                     |
|---|----------|--------------|-------------|----------------------------|
| ST. CLAIR RIVER TRANSECT 6 STATION 1 TAXON          | GRA<br>- | 8<br>8<br>8  | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| PORIFERA<br>Spongilla                               | +        | +            | +           | +                          |
| ALL PORIFERA  |          |              |             | 0                          |
| CNIDARIA<br>Hypra                                   | 0        | ø            | ٥           | 4                          |
| ALL CNIDARIA  |          |              |             | 14                         |
| RHABDOCOELA   | 0        | 8            | 0           | 41                         |
| TRICLADIDA  | 0        | ო            | 8           | 34                         |
| NEMATODA  | 0        | <del>0</del> | 12          | 275                        |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA ELONGATA | 0        | -            | -           |                            |
|   | -        | 0            | -           |                            |
| ALL HIRDINEA  |          |              |             | 28                         |
| OLIGOCHAETA<br>Spirosperma                          | 4        | ın           | 0           |                            |
| DTHER<br>ALL OLIGOCHAETA                            | 36       | 59           | 4           | 792                        |
|   |          |              |             |                            |

13

| TRANSECT 6 STATION 1 (CONT'D)  TRANSC TAXON  TAXON  TAXON  COCEPODA  CYCLOPS BICUSPIDATUS  DIAPTOMUS  LIMNOCALANUS  ALL COPEDOA  AMPHIPODA  AMPHIPODA  AMPHIPODA  AMPHIPODA  AMPHIPODA  AMPHIPODA  ASELLUS  ALL SOPODA  ASELLUS  ASE |                 |        |              |          |   |     |
|--|-----------------|--------|--------------|----------|---|-----|
| BICUSPIDATUS  US  US  US  US  US  US  US  US  US   | 9               | g      | 2            | O TAIL   | CCTIMATE                                |     |
| BICUSPIDATUS  US  US  US  US  US  US  US  US  US   |                 |        | ]<br>        |          | NO./50. M                               | ETE |
| ######################################   | ١,              | ;      |              |          | 1 |     |
| COLODA   |                 | 0      | -            | -        |   |     |
| COLDA  | DIAPTOMUS       | 7      | ĸ            | it)      |   |     |
| COLDA  | 1               |        |              |          |   |     |
| CLOPS ODA  A AZTECA A AZTECA 13 25 9 11 ODA  GONIDAE E E E E E E T E R A  A ZTECA 13 25 9 11 ODA  12 50 11 0DA  12 50 11 0DA  11 10 0DA  12 50 11 0DA  E E E E E E E E E E E E E E E E E E   | HARPACTICOIDA   | 0      | -            | ო        |   |     |
| CLOPS CLOPS CLOPS CLOPS CLOPS CLOPS S CLOPS S S S S S S S S S S S S S S S S S S  | I DENOCAL ANDS  | €.     | -            | c        |   |     |
| CLOPS  |                 | )      | •            | •        |   |     |
| S 80 193 84  A AZTECA 13 25 9  IPODA  ODA  GONIDAE  E  | MACROCYCLOPS    | 0      | -            | -        |   |     |
| S 80 183 84  A AZTECA 13 25 9  IPODA  GONIDAE  E   |                 |        |              |          |   |     |
| S  | ALL COPEPODA    |        |              |          | 200                                     |     |
| S  | AMPHIPODA       |        |              |          |   |     |
| TECA  13 25 9  A  14 25 9  15 50 11  16 14 12  AE  | GAMMARUS        | 9      | 193          | 84       |   |     |
| AAE  AAE  AAE  AAE  AAE  AAE  AAE  AAE   |                 | Ç      | ŀ            | •        |   |     |
| DAE 12 50 11 286 570 318 0 1 0 1 1 0 14 12 AE  |                 | 2      | 72           | <b>D</b> |   |     |
| DAE 50 11 286 570 318 0 1 0 13 19 7 10 14 12 AE  | ALL AMPHIPODA   |        |              |          | 2782                                    |     |
| DAE 50 11  286 570 318  0 1 0  12 50 11  | ISOPODA         |        |              |          |   |     |
| DAE 56 1 286 570 318 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0   | ASELLUS         | 12     | ဂ္ဂ          | =        | 503                                     |     |
| DAE 56 1 286 570 318 0 1 0 1 0 1 0   |                 |        |              |          |   |     |
| DAE 5 6 1 286 570 318 0 1 0 1 0 1 0 1 0  | ALL ISOPODA     |        |              |          | 203                                     |     |
| DAE 570 318 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | DIPTERA         |        |              |          |   |     |
| 286 570 318<br>0 1 0<br>13 19 7<br>10 14 12<br>AE  | CERATOPOGONIDAE | ĸ      | 9            | -        |   |     |
| 0 1 0 1 0 14 12 16 14 12 16 1 0 1 0  | CHIRONOMIDAE    | 286    | 570          | 318      | 8085                                    |     |
| 13 19 7<br>10 14 12<br>AE  | EMPIDIDAE       | 0      | -            | 0        |   |     |
| 13 19<br>10 14<br>AE 0 1   | ALL DIPTERA     |        |              |          | 8174                                    |     |
| 13 19 19 10 14 10 14 0 1   | EPHEMEROPTERA   |        |              |          |   |     |
| 13 19 10 14 A A 0 1  | CAENIDAE        |        |              |          | •                                       |     |
| 10 14 DAE  | CAENIS          | t<br>C | <b>6</b>     | 7        | i                                       |     |
| 10 14 DAE 0 1  |                 |        |              |          |   |     |
| ot o<br>4  | EPHEMERIDAE     |        |              |          |   |     |
| 0  | HEXAGENIA       | 5      | <del>-</del> | 7        |   |     |
| •  | FOHERFRELLIDAE  |        |              |          |   |     |
|  | EPHEMERELLA     | 0      | -            | 0        |   |     |
|  |                 |        |              |          |   |     |
|  |                 |        |              |          |   |     |

| , 10011111                              |          |        |                  |               |
|---|----------|--------|------------------|---------------|
| INANSECT 6 STALLON 1 (CONT'O)           | 9 A Q D  | 5      | V -              | ECTIMATED     |
| TAXON                                   | -        | 1 2 3  | , m              | NO./SQ. METER |
| TERA                                    |          | !<br>! | (<br>1<br>(<br>1 | · 1           |
| BRACHICENTROS                           | -        | -      | 0                |               |
| HYDROPTILIDAE                           |          |        |                  |               |
| ORTHOTRICHIA                            | 0        | 0      | -                |               |
| LEPTOCERIDAE                            |          |        |                  |               |
| CERACLEA                                | 0        | 8      | ~                |               |
| 111111111111111111111111111111111111111 | ,        | l      | ł                |               |
| OECETIS                                 | ဓ        | 28     | 91               |               |
| 1 3 1 2 1 2 1                           |          |        |                  |               |
| SETODES                                 | 0        | 0      | ღ                |               |
| 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |          |        |                  |               |
| POLYCENTROPODIDAE                       |          |        |                  |               |
| POLYCENTROPUS                           | 0        | 4      | က                |               |
| ALL TRICHOPTERA                         |          |        |                  | 730           |
|   |          |        |                  |               |
| ACARINA                                 | a        | -      | -                | <b>78</b>     |
| GASTROPODA                              |          |        |                  |               |
| AMMICOLA                                | 8        | 78     | 79               |               |
|   |          |        |                  |               |
| ELIMIA LIVESCENS                        | <b>6</b> | 34     | <b>₽</b>         |               |
|   | Ş        | ç      | ¥                |               |
| 1 | 3        | •      | 2                |               |
| LYMMAEA                                 | 0        | -      | 0                | •             |
| * |          |        |                  |               |
| PHYSA                                   | 5        | 12     | <b>6</b>         |               |
|   |          |        |                  |               |
| ALL GASTROPODA                          |          |        |                  | 2541          |
| PELECYPODA                              |          |        |                  |               |
| SPHAERIDAE                              | ,        |        |                  |               |
| SPHAERIUM                               | 7        | 4      | -                | 8             |
| UNIONIDAE                               | 0        | 0      | -                |               |
| ALL PELECYPODA                          |          |        |                  | 10<br>10      |

| R RIVER TRANSECT 6 STATION 2 GRAB COUNTS   1 2 3 NO / SQ.  |                                 |           |           |       |          | 70 10                      |
|--|---------------------------------|-----------|-----------|-------|----------|----------------------------|
| A  | ST. CLAIR RIVER                 | 6 STATION | į         |       |          |                            |
| A 25 20 35  A ETA 25 20 35  A ETA 25 20 35  A ETA 1 44 13  I GOCHAETA 1 0 0 1 4  I A 13  I A 10 0 0 1 1 1  I A 10 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0  | TAXON                           |           | <b>48</b> | 8 COC | STS<br>B | ESTIMATED<br>NO./SO. METER |
| IDARIA   | CNIDARIA<br>HYDRA               |           | 0         | 0     | -        | 7                          |
| A SECUSPIDATUS  A SEPERAL  A SECUSPIDATUS  B SECUSPIDATUS  A SECUSPIDATUS  A SECUSPIDATUS  A SECUSPIDATUS  B SECUSPIDATUS  A S | ALL CNIDARIA                    |           |           |       |          | •                          |
| A GOCHAETA  I GOCHAETA  I GOCHAETA  I A 4 13  I A 5 0 0  I A 7 0 0  I A 7 0 0  I A 7 0 0  I A 7 0 0  I A 8 0 0  I A 9 0 0  I A 1 0  I A 1 0 0  I A 1 0 0  I A 1 0 0  I A 1 0 0  I A 1 0 0  I A 1 0  I A 1 0 0  I A 1 0 0  I A 1 0 0  I A 1 0 0  I A 1 0 0  I A 1 0  I A 1 0 0 | NEMATODA                        |           | 22        | 9     | 32       | 551                        |
| ADOCERA  ADO | OL I GOCHAETA                   |           |           |       |          |                            |
| 11 44 13  190CHAETA  1 4 13  1 1 1 1 1  1 1  | SPIROSPERMA                     |           | 0         | -     | 4        |                            |
| ### ### ### ### ### ### ### ### ### ##   | OTHER<br>ALL OLIGOCHAETA        |           | Ξ         | 1     | 13       | 203                        |
| ADOCERA ADOCERA PS BICUSPIDATUS OMUS CTICOIDA CTICOIDA CALANUS CALANUS PEPODA PHIPODA POGGNIDAE SA 2 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1   | CLADOCERA<br>DAPHNIA            |           | -         | 0     | 0        | •                          |
| PS BICUSPIDATUS OMUS   | ALL CLADOCERA                   |           |           |       |          | •                          |
| PS BICUSPIDATUS 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | COPEPODA                        |           |           |       |          |                            |
| CTICOIDA  CTICOIDA  CALANUS  C | CYCLOPS BICUSPIDA               | SD:       | 0         | -     | -        |                            |
| CTICOIDA  CALANUS  CALANUS  CALANUS  PEPODA  PA  PHIPODA  PHIPODA  PHIPODA  A  CALANUS  A  A  A  A  A  A  A  A  A  A  A  A  A  | DIAPTOMUS                       |           | ĸ         | 4     | 8        |                            |
| CALANUS  CALANUS  PEPODA  PEPODA  PA  PUS  PHIPODA  PUS  PHIPODA  POGONIDAE  A0 33   | HARPACTICOIDA                   |           | 0         | -     | 0        |                            |
| PEPODA  PA  RUS  PHIPODA  POGONIDAE  38 40 33  | LIMNOCALANUS                    |           | -         | 0     | 0        |                            |
| DA<br>RUS<br><br>PHIPODA<br>PUGONIDAE 1 0 0  | ALL COPEPODA                    |           |           |       |          | 103                        |
| PHIPODA PUGONIDAE PUGONIDAE 38 40 33 77  | AK:>HIPODA<br>GAMMARIS          |           | c         | ć     | c        | č                          |
| PHIPODA PUGONIDAE 1 0 0 OMIDAE 38 40 33 7  |                                 |           | ٧         | >     | י        | 5                          |
| POGONIDAE 1 0 0 OMIDAE 38 40 33  | ALL AMPHIPODA                   |           |           |       |          |                            |
| 38 40 0  | DIPTERA                         |           |           | •     |          |                            |
|  | CERATOPOGONIDAE<br>CHIRONOMIDAE |           | - 86      | 0 0   | 0 6      | 764                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |     | 5/8/84        | 4        |
|---------------------------------------|------|-------------|-----|---------------|----------|
| TRANSECT 6 STATION 2 (CONT'D)         | GRAB | GRAB COUNTS | STS | ESTIMATED     | <b>.</b> |
| TAXON                                 | - !  | 7           | 6   | NO./SQ. METER | METER    |
| EPHEMEROPTERA<br>CAENIDAE             |      |             |     |               |          |
| CAENIS                                | 0    | -           | 0   |               |          |
| EPHEMERIDAE                           |      |             |     |               |          |
| TEXAGENIA                             | 0    | 0           | -   |               |          |
| ALL EPHEMEROPTERA                     |      |             |     | <b>‡</b>      |          |
| GASTROPODA                            |      |             |     |               |          |
| AMNICOLA                              | ō    | ~           | 0   |               |          |
| GYRAULUS                              | ო    | 0           | 0   |               |          |
|                                       | -    | -           | 0   |               |          |
| ALL GASTROPODA                        |      |             |     | 117           |          |
| PELECYPODA<br>Sphaeridae              |      |             |     |               |          |
| PISIDIUM                              | 8    | 0           | 0   | 7             |          |
| ALL PELECYPODA                        |      |             |     | =             |          |

(

The second of

| MACROZOOBENTHOS PONAR GRAB COUNT DATA               |            |             |          | 5/8/84                     |
|---|------------|-------------|----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 6 STATION 3 TAXON          | GRA<br>*   | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| NEMATODA  | 7          | ō           | 80       | 172                        |
| OL I GOCHAETA                                       | 9          | 00          | -        | 200                        |
| CLADOCERA<br>DAPHNIA                                | •          | -           | 0        |                            |
| ALL CLADOCERA                                       |            |             |          | 4                          |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                    | -          | 0           | 8        |                            |
| DIAPTOMUS   | <b>L</b> O | 4           | 5        |                            |
| HARPACTICOIDA                                       | -          | -           | 0        |                            |
| LIMNDCALANUS  | -          | -           | 0        |                            |
| ALL COPEPODA  |            |             |          | 179                        |
| AMPHI PODA<br>GAMMARUS                              | 0          | ю           | 0        | 24                         |
| ALL AMPHIPODA                                       |            |             |          | 21                         |
| TERRESTRIAL INSECT                                  | 0          | -           | 0        | 7                          |
| DIPTERA<br>CHIROMONIDAE<br>EMPIDIDAE<br>Ali DIPTEDA | 63         | - 18<br>-   | -0       | 337                        |
|   |            |             |          |                            |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA   |      |             | 5/8/84   |
|---|------|-------------|--|
| TRANSECT 6 STATION 3 (CONT'D)           | GRAR | SEAR COUNTS | CSTIMATED  |
| TAXON                                   | -    | 2           | z  |
| EPHEMEROPTERA                           | <br> | <br>        | 7<br>}<br>}<br>\$<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| CAENIDAE                                |      |             |  |
| CAENIS                                  | 0    | 0           | _  |
| EPHEMERIDAE                             |      |             |  |
| HEXAGENIA                               | 0    | 0           | _  |
|   |      |             |  |
| ALL EPHEMEROPTERA                       |      |             | 41   |
| GASTROPODA                              |      |             |  |
| AMNICOLA                                | 4    | 'n          | 0  |
| 111111111111111111111111111111111111111 |      |             |  |
| PHYSA                                   | +    | 0           | 0  |
| 1 |      |             |  |
| ALL CARTEDODOS                          |      |             | 97   |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA  |            |     |             | 5/8/84        |
|--|------------|-----|-------------|---------------|
| ST. CLAIR RIVER TRANSECT 7 STATION 1   | , <b>8</b> | 8 S | GRAB COUNTS | ESTIMATED     |
| TAXON  | -   <      | 7 - |             | MO./SQ. METER |
| NAME OF COLUMN ASSESSMENT ASSESSM | •          | -   | ,           | 5             |
| TRICLADIDA   | 8          | n   | 0           | 46.           |
| NEMERTINEA   | 0          | -   | 0           | 2             |
| NEMATODA   | 22         | 20  | 12          | 372           |
| BRYOZOA  | +          | 0   | 0           | +             |
| OLIGOCHAETA<br>Spirosperma   | <b>4</b>   | 32  | <b>60</b>   |               |
| OTHER<br>ALL OLIGOCHAETA   | 220        | 151 | 185         | 4435          |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA  | 0          | 8   | 0           | <b>4</b>      |
| ALL POLYCHAETA   |            |     |             | 2             |

| 8/84     |
|----------|
|          |
| <b>®</b> |
| _        |
| 2        |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
|          |
| _        |
| 7        |
| DATA     |
|          |
| ⊨        |
| ×        |
| COUNT    |
| Ũ        |
| 60       |
| GRAB     |
| 援        |
| 9        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                   |     |        |             | 5/8/84        |
|---|-----|--------|-------------|---------------|
| TRANSECT 7 STATION 1 (CONT'D)                           | GR. | 9<br>9 | GRAB COUNTS | ESTIMATED     |
| TAXON   | -   | 8      | m           | NO./SQ. METER |
| S BICUSPIDAT  | -   | ٥      | 0           |               |
| DIAPTONUS   | 13  | 18     | -           |               |
| HARPACTICOIDA   | 8   | 0      | 60          |               |
| LIMNOCALANUS  | 0   | 8      | 0           |               |
| UNIDENTIFIED NAUPLII                                    | 0   | 0      | -           |               |
| ALL COPEPODA  |     |        |             | 317           |
| OSTRACODA   | 0   | -      | 0           |               |
| AMPHI PODA<br>GAMMARUS                                  | 8   | 29     | 00.         |               |
| HYALELLA AZTECA   | -   | -      | 0           | G<br>S<br>S   |
| TERRESTRIAL INSECT                                      | 7   | φ      | •           | 145           |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>FMDIDIDAE | 280 | - 80   | 0110        | 4345          |
| ALL DIPTERA   |     | •      | •           | 4359          |

| TRANSECT 7 STATION 1 (CONT'D)           | 9400             | 5        | į           | 03140                                 |
|---|------------------|----------|-------------|---------------------------------------|
|   | -                | 1 2 3    | ი ლ<br>_    | NO./SQ. METER                         |
| EPHEMEROPTERA                           | ;<br>;<br>;<br>; | !<br>!   | !<br>!<br>! | • • • • • • • • • • • • • • • • • • • |
| CAENIDAE                                |                  |          |             |                                       |
| CAENIS                                  | 5                | -        | -           |                                       |
| 1 1 2 1 5                               |                  |          |             |                                       |
| EPHEMERIDAE                             |                  |          |             |                                       |
| HEXAGENIA                               | 60               | 9        | 4           |                                       |
| !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! |                  |          |             |                                       |
| ALL EPHEMEROPTERA                       |                  |          |             | 227                                   |
| TRICHOPTERA                             |                  |          |             |                                       |
| LEPTOCERIDAE                            |                  |          |             |                                       |
| DECETIS                                 | -                | 7        | 0           |                                       |
|   |                  |          |             |                                       |
| TRIAENODES                              | -                | 0        | -           |                                       |
| *************************************** |                  |          |             |                                       |
| ALL TRICHOPTERA                         |                  |          |             | 34                                    |
| ACARINA                                 | -                | -        | -           | 21                                    |
| GASTROPODA                              |                  |          |             |                                       |
| AMNICOLA                                | 32               | 32       | 3           |                                       |
| ELIMIA LIVESCENS                        | 7                | 0        | 0           |                                       |
|   |                  | <b>)</b> | ,           |                                       |
| PHYSA                                   | 6                | 8        | 0           |                                       |
| ALL GASTROPODA                          |                  |          |             | 908                                   |
| PELECYPODA                              |                  |          |             |                                       |
| SPHAERIIDAE                             |                  |          |             |                                       |
| PISIDIUM                                | <del>.</del>     | •        | 8           |                                       |
| SPHAERIUM                               | -                | -        | ~           |                                       |
|   |                  | •        | )           |                                       |
| ALL SPHAERIIDAE<br>All Pelecypoda       |                  |          |             | 186<br>881                            |
|   |                  |          |             | !!!                                   |

| 5/8/84                  |
|-------------------------|
|                         |
| DATA                    |
| S PONAR GRAB COUNT DATA |
| GRAB                    |
| PONAR                   |
| MACR0200BENTHUS         |

| ST. CLAIR RIVER          | TRANSECT | TRANSECT 7 STATION 2 |     | į           | !         |                            |
|--------------------------|----------|----------------------|-----|-------------|-----------|----------------------------|
| TAXON                    |          | ı                    | - G | GRAB COUNTS | STAL<br>B | ESTIMATED<br>NO./SQ. METER |
| PORIFERA<br>SPONGILLA    |          |                      | 0   | ٥           | +         | 1                          |
| ALL PORIFERA             |          |                      |     |             |           | 0                          |
| NEMATODA                 |          |                      | 23  | 32          | 34        | 613                        |
| OL I GOCHAETA<br>NA I S  |          |                      | -   | c           | c         |                            |
| SPIROSPERMA              |          |                      |     | <b>o</b>    | , 02      |                            |
| DTHER<br>ALL OLIGOCHAETA |          |                      | -   | 98          | •         | 85<br>85                   |
| COPEPODA<br>DIAPTOMUS    |          |                      | ø   | -           | 4         |                            |
| LIMNOCALANUS             |          |                      | n   | -           | 8         |                            |
| ALL COPEPODA             |          |                      |     |             |           | 413                        |
| AMPHIPODA<br>Gammarus    |          |                      | 0   | 8           | m         | 34                         |
| ALL AMPHIPODA            |          |                      |     |             |           | 76                         |
| TERRESTRIAL INSECT       |          |                      | •   | 0           | 0         |                            |
| DIPTERA<br>CHIRONOMIDAE  |          |                      | n   | 24          | i.        | 289                        |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA                    |     |             |     | 5/8/84                                |
|--|-----|-------------|-----|---------------------------------------|
| TRANSECT 7 STATION 2 (CONT'D)                            | į   | į           | ļ   |                                       |
| NO   | - 6 | GRAB COUNTS | S E | ESTIMATED<br>NO./SQ. METER            |
| EPHEMEROPTERA  |     |             |     | ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! |
| EPHEMERIDAE  |     |             |     |                                       |
| HEXAGENIA  | 0   | B           | 4   |                                       |
| BAETISCIDAE  |     |             |     |                                       |
| BAETISCA   | 0   | 12          | 0   |                                       |
|  |     |             |     |                                       |
| ALL EPHEMEROPTERA  |     |             |     | 145                                   |
| TRICHOPTERA  |     |             |     |                                       |
| BRACHYCENTRIDAE  |     |             |     |                                       |
| BRACHYCENTRUS  | 0   | m           | 0   |                                       |
|  | •   |             |     |                                       |
| CERACLEA   | 0   | 6           | 0   |                                       |
| 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                  | •   | I           | •   |                                       |
| DECETIS  | 0   | -           | -   |                                       |
|  |     |             |     | !                                     |
| ALL INICHOFIERA  |     |             |     | <b>4</b>                              |
| ACARINA  | 0   | -           | 0   | 7                                     |
| GASTROPODA   |     |             |     |                                       |
| AMNICOLA   | -   | ស           | 2   |                                       |
| ELIMIA LIVESCENS   | 8   | 21          | 13  |                                       |
| GYRAULUS   | o   | C           | -   |                                       |
| \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ | )   | •           | •   |                                       |
| ARYM   | 0   | m           | 0   |                                       |
| ALL GASTROPODA   |     |             |     | 386                                   |
| PELECYPODA   |     |             |     |                                       |
| SPHAERIDAE   |     |             |     |                                       |
| PISIDIOM   | ო   | ₩           | 30  |                                       |
| SPHAERIUM  | -   | ID.         | 8   |                                       |
| ALL SPHAERIDAE   |     |             |     | 372                                   |
| ALL PELECYPODA   |     |             |     | 372                                   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                   |              |   |          | 5/8/84        |
|---|--------------|---|----------|---------------|
| ST. CLAIR RIVER TRANSECT 7 STATION 3                    | Š            | 2 m 4 m 2 m 4 m 2 m 4 m 2 m 4 m 2 m 4 m 2 m 2 | 2        |               |
| TAXON   | Š –          | 6  <br>2 4                                    | 2        | NO./SQ. METER |
|   | 92           | 67  | 5        | 1467          |
| OLIGOCHAETA<br>Spirosperma                              | <del>0</del> | =   | 33       |               |
| OTHER<br>ALL OLIGOCHAETA                                | 27           | 2   | <b>.</b> | 89            |
| COPEPODA CYCLOPS BICUSPIDATUS                           | -            | 0   | 0        |               |
| DIAPTOMUS   | w            | 32  | 46       |               |
| LIMMOCALANUS  | 8            | 35  | 0        |               |
| ALL COPEPODA  |              |   |          | 737           |
| AMPHI PODA<br>GAMMARUS                                  | ıp.          | ND.   | -        | 76            |
| ALL AMPHIPODA   |              |   |          | 91            |
| TERRESTRIAL INSECT                                      | 6            | 0   | 8        | 34            |
| DIPTERA<br>CERATOPOGGNIDAE<br>CHIRONOMIDAE<br>EMPIDIDAE | 040          | 040   | - 22 -   | 388           |
| ALL DIPTERA   | •            | •   | •        | 413           |

(

| TRANSECT 7 STATION 3 (CONT'D)  GRAB COUNTS  TAXON  FPHEMEROPTERA  CAENIDAE   | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |     |     | 5/ 8/84                                   |
|--|---|-----|-----|-----|---|
| ## FRA   1 1 0 0 1 3   1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0   | 7 STATION 3                             | č   | 9   |     |   |
| A  | TAXON                                   | - 6 | 5 ~ | 2 6 | NO./SQ. METER                             |
| A  | EPHEMEROPTERA                           |     | 1   | 1   | !<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>! |
| A E O  | CAENIDAE                                |     |     |     |   |
| A TRIDAE O 1 3 16 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18  | CAENIS                                  | -   | -   | 0   |   |
| LIDAE LLDAE LLDAE LLDAE LLDAE LLDAE LLDAE LROPTERA A A TRIDAE NTRUS A TRIDAE NTRU |   |     |     |     |   |
| EROPTERA  A TRIDAE NTRUS HIDAE | HEXAGENIA                               | 0   | -   | ო   |   |
| EROPTERA  A TRIDAE NTRUS HIDAE NTRUS HIDAE PSYCHE PSYCH PSYCHE PSYCH PSYCHE PSYCHE PSYCH PSYC | • |     |     |     |   |
| EROPTERA  A TRIDAE NTRUS HIDAE NTRUS HIDAE PSYCHE OAE  OPTERA  OPTERA  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 0 1 0   | EPHEMERELIDAE<br>EDITMESELLA            | c   | •   | •   |   |
| EROPTERA  A  TRIDAE  NTRUS  HIDAE  HIDAE  PSYCHE  O 1 0  1 1 0  ES  OPTERA  O 1 0  1 0  1 0   |   | >   | >   | -   |   |
| A TRIDAE   | ALL EPHEMEROPTERA                       |     |     |     | 48  |
| TRIDAE NTRUS NTRUS HIDAE HIDAE PSYCHE O 0 2 0 1 0 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0  | LEPIDOPTERA                             | 0   | -   | 0   | ٠   |
| TRIDAE NTRUS HIDAE HIDAE PSYCHE O  | TRICHOPTERA                             |     |     |     |   |
| HIDAE HIDAE HIDAE PSYCHE DAE  OPTERA  OPTERA  1 1 0  1 0 1 0  1 0 1 0  1 0 1 0   | BRACHYCENTRIDAE                         |     |     |     |   |
| HIDAE HIDAE PSYCHE DAE DAE  OPTERA  OP | BRACHYCENTRUS                           | 4   | e   | 16  |   |
| HIDAE PSYCHE DAE DAE DAE DAE DAE DAE DAE DAE DAE DA  | \$ 8 8 F 0 9 8 8 8 P 2 9 8 8            |     |     |     |   |
| PSYCHE  DAE  OPTERA  OPTERA  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 1 0  1 0 0 1 0  1 0 0 0 0   | HYDROPSYCHIDAE                          |     |     |     |   |
| DAE 0 1 0 1 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0  | CHEUNATOPSYCHE                          | 0   | 0   | ~   |   |
| ES   |   |     |     |     |   |
| 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1  |   | c   | -   | c   |   |
| 1 1 0  |   | >   | •   | •   |   |
| 1 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0  | DECETIS                                 | -   | -   | 0   |   |
| OPTERA  OPTERA  OPTERA  OPTERA  O 1 0  1VESCENS  16 38 55  |   |     |     |     |   |
| OPTERA  OPTERA  OPTERA  O 1 0  IVESCENS  16 38 55  | TRIAENDOES                              | -   | -   | 0   |   |
| OPTERA  | * ! ! ! ! ! ! ! ! ! !                   |     |     |     |   |
| IVESCENS 16 38 55  | ALL TRICHOPTERA                         |     |     |     | 207                                       |
| 1VESCENS 16 38 55  | ACARINA                                 | 0   | -   | 0   | _   |
| 1VESCENS 16 38 55  | GASTROPOOA                              |     |     |     |   |
| MIA LIVESCENS 16 38 55   | AMNICOLA                                | EO. | IO. | 42  |   |
| SSA 0 1 0  |   | 9   | 38  | 22  |   |
| ***************************************  | 1                                       | 0   | -   | 0   |   |
|  | 400000000000000000000000000000000000000 |     |     |     | Š   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |              | 5/8/84                  |
|---------------------------------------|------|-------------|--------------|-------------------------|
| TRANSECT 7 STATION 3 (CONT'D)         |      |             |              |                         |
| TAXON                                 | - GR | GRAB COUNTS | STNU<br>B    | ESTIMATED NO./SQ. METER |
| PELECYPODA                            |      |             |              | 1                       |
| SPHAERIIDAE                           |      |             |              |                         |
| PISIDIUM                              | 9    | 16          | 7            |                         |
| ]                                     |      |             |              |                         |
| SPHAERIUM                             | Ø    | 7           | <del>2</del> |                         |
| 1 5 6 7 1 1 8 1                       |      |             |              |                         |
| ALL SPHAERIIDAE                       |      |             |              | 468                     |
| UNIONIDAE                             |      |             |              |                         |
| LAMPSILIS                             | 0    | -           | 0            |                         |
|                                       |      |             |              |                         |
| ALL DELECYDODA                        |      |             |              | 475                     |

| MACRUZUUBENIHUS PUNAR GRAB COUNT DATA   |     |            |    | 5/8/84        |
|---|-----|------------|----|---------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 1    | ē   | Š          | 4  | 4             |
| TAXON                                   | 5 - | 1 2 3      | 20 | NO./SQ. METER |
| RHABDOCOELA                             | 0   | LC .       | -  | 4             |
| TRICLADIDA                              | 0   | -          | 0  | <b>r</b>      |
| NEMATODA                                | 35  | 70         | o  | 764           |
| OLIGOCHAETA                             |     |            |    |               |
| SIV                                     | -   | 0          | 0  |               |
| SPIROSPERMA                             | 23  | 34         | =  |               |
| 01HER                                   | 20  | 103        | 33 |               |
| ALL DLIGOCHAETA                         | ?   | }          | ;  | 1715          |
|   | 80  | 157        | 33 | 1364          |
| ALL POLYCHAETA                          |     |            |    | 1364          |
| COPEPODA                                |     |            |    |               |
| DIAPTOMUS                               | -   | N          | 7  |               |
| HARPACTICOIDA                           | 0   | 11         | -  |               |
| LIMNOCALANUS                            | 0   | 0          | ₩  |               |
|   |     |            |    |               |
| PARACYCLOPS                             | 0   | <b>6</b> 0 | ო  |               |
| ALL COPEPODA                            |     |            |    | 324           |
| AMPHIPODA                               |     |            |    |               |
| GAMMARUS                                | ø   | ស្វ        | 4  |               |
| HYALELLA AZTECA                         | 8   | ស          | 4  |               |
| , |     |            |    |               |
| ALL AMPHIPODA                           |     |            |    | 193           |

| TRANSECT 8 STATION 1 (CONT'D) |                            |             |           |                            |
|-------------------------------|----------------------------|-------------|-----------|----------------------------|
| TAXON                         | GR.<br>→                   | GRAB COUNTS | INTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| ISOPODA                       | :<br>!<br>!<br>!<br>!<br>! |             |           |                            |
| ASELLUS                       | 8                          | -           | 0         | 23                         |
|                               |                            |             |           |                            |
| ALL ISOPODA                   |                            |             |           | 21                         |
| TERRESTRIAL INSECT            | -                          | 0           | -         | 4                          |
| DIPTERA                       |                            |             |           |                            |
| CERATOPOGONIDAE               | 0                          | 8           | 0         |                            |
| CHIRONOMIDAE<br>ALL DIPTERA   | 99<br>90                   | 10          | 21        | 806<br>820                 |
| EPHEMEROPTERA                 |                            |             |           |                            |
| CAENIDAE                      | ç                          | •           | Ü         |                            |
|                               | n<br>n                     | <u>0</u>    | 67        |                            |
| EPHEMERIDAE                   |                            |             |           |                            |
| HEXAGENIA                     | ဖ                          | -           | 7         |                            |
| ALL EPHEMEROPTERA             |                            |             |           | 627                        |
| TRICHOPTERA                   |                            |             |           |                            |
| POLYCENTROPODIDAE             |                            |             |           |                            |
| POLICENTRUPUS                 | 0                          | N           | 0         |                            |
| ALL TRICHOPTERA               |                            |             |           | 4                          |
| ACARINA                       | 0                          | 8           | 0         | . #                        |
| GASTROPODA                    |                            |             |           |                            |
| AMNICOLA                      | n                          | 0           | 0         |                            |
| ELIMIA LIVESCENS              | •                          | ო           | 8         |                            |
|                               |                            |             |           |                            |
| GYRAULUS                      | 0                          | 0           | -         |                            |
| PHYSA                         | •                          | c           | c         |                            |
| 1 1 1                         | -                          | >           | >         |                            |
| ALL GASTROPODA                |                            |             |           | 76                         |

|   |      |             | 5/8/84        |
|---|------|-------------|---------------|
| TRANSECT 8 STATION 1 (CONT'D)           |      |             |               |
| TAXAL                                   | GRAB | GRAB COUNTS | ESTIMATED     |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | -    | 1 2 3       | NO./SQ. METER |
| PELECYPODA                              |      | -           |               |
| SPHAERIIDAE                             |      |             |               |
| PISIDIUM                                | -    |             |               |
|   | •    |             |               |
| SPHAERIUM                               | ·    | ,           |               |
| * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | ٧    |             |               |
| ALL SPHAERIIDAE                         |      |             | ;             |
| ALL PELECYPODA                          |      |             | 7             |

| <u> </u>                        |
|---------------------------------|
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
|                                 |
| E                               |
| DATA                            |
| 5                               |
| ᅙ                               |
| Ü                               |
| ¥B                              |
| æ                               |
| œ                               |
| Ž                               |
| <u> </u>                        |
| S                               |
| Ξ                               |
| Z                               |
| 8                               |
| ICRUZUOBENTHOS PONAR GRAB COUNT |
| 2                               |
| 3                               |

| Z NOTING OF THE PROPERTY OF TH | GRA      | GRAB COUNTS | MTS        | FOTTMATER     |
|--|----------|-------------|------------|---------------|
| NON  | -        | ~           | e e        | NO./SQ. METER |
| RHABDOCOELA  | 6        | E           | 4          | 110           |
| NEMATODA   | 27       | 53          | 4          | 668           |
| OL I GOCHAETA  |          |             |            | }             |
| SEXULOOKALO LA   | <b>6</b> | Ξ           | 4          |               |
| OTHER<br>All of Gochaeta   | 38       | 7.1         | 8          |               |
|  |          |             |            | 1680          |
| POLYCHAETA   |          |             |            |               |
|  | 4        | 8           | <b>4</b> 0 | 168           |
| All Dolvensers   |          | )           | )          | 2             |
|  |          |             |            | 165           |
| COPEPODA   |          |             |            |               |
| CYCLOPS BICUSPIDATUS   | •        | -           | c          |               |
|  | ı        |             | >          |               |
| DIAPTOMUS  | 44       | c           | a          |               |
| 1 1 9 9 1 1 1 1 1  | 1        | 2           | 0          |               |
| HARPACTICOIDA  | _        | 0           | 0          |               |
| (  |          |             |            |               |
|  | N        | 0           | 0          |               |
| ALL COPEPODA   |          |             |            | 243           |
| OFTRACODA  | o        | c           | a          | )<br>         |
| AMBUTODA   | •        | •           | •          | 7             |
| GAMMARUS   | ,        |             | ı          |               |
|  | 4        | ~           | ın         |               |
| HVALELLA AZTECA  | •        | c           | c          |               |
|  |          | <b>,</b>    | <b>u</b>   |               |
| ALL AMPHIPODA  |          |             |            |               |

C

| TRANSECT 8 STATION 2 (CONT.D)          |      |             |           |                            |
|--|------|-------------|-----------|----------------------------|
|  | GRA- | GRAB COUNTS | STNL<br>3 | ESTIMATED<br>NO./SQ. METER |
| DIPTERA                                | 52   | 5           | 54        | et 80                      |
| EPHEMEROPTERA .<br>Caenidae<br>Caenis  | 8    | 0           | 8         |                            |
| EPHEMERIDAE<br>HEXAGENIA<br>           | -    | 0           | +         | . 4                        |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OECETIS | 8    | •           | •         |                            |
| ACARINA                                | -    | 0           | 0         | : <b>-</b>                 |
| GASTROPODA<br>Amnicola                 | 7    | 8           | 5         |                            |
| ELIMIA LIVESCENS                       | 0    | 0           | -         |                            |
| GYRAULUS                               | 4    | -           | -         |                            |
| PHYSA                                  | 8    | 0           | 8         |                            |
| VALVATA TRICARINATA                    | 0    | 0           | -         |                            |
| ALL GASTROPODA                         |      |             |           | 275                        |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM  | o    | 60          | 12        | . 65                       |
| ALL PELECYPODA                         |      |             |           | 165                        |

| 5/8/84          |
|-----------------|
|                 |
| ITA             |
| GRAB COUNT DATA |
| PONAR GRAE      |
| ROZDOBENTHOS F  |

1

| -                                    |     |           |      |               |
|--------------------------------------|-----|-----------|------|---------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 3 | 8   | AB CO     | UNTS | ESTIMATED     |
| TAXON                                | -   | 1 2 3     | 6    | NO./SQ. METER |
|                                      | 0   | 16        | 0    | 510           |
| ALL CNIDARIA                         |     |           |      | 110           |
| RHABDOCOELA                          | 21  | <b>36</b> | 53   | 689           |
| NEMATODA                             | 74  | 6         | 15   | 892           |
| OLIGOCHAETA<br>Spirosperma           | 42  | 13        | 166  |               |
| OTHER<br>ALL OLIGOCHAETA             | 846 | 848       | 620  | 18146         |
| CLADOCERA<br>DAPHNIA                 | 0   | -         | 0    |               |
| ILYOCRYPTUS                          | 0   | 7         | 0    |               |
| ALL CLADGERA                         |     |           |      | 21            |
| COPEPODA<br>DIAPTOMUS                | 0   | 0         | -    |               |
| HARPACTICOIDA                        | 0   | 11        | 0    |               |
| ALL COPEPODA                         |     |           |      | 124           |
| AMPHIPODA<br>Gammarus                | ñ   | 6         | ю    |               |
|                                      | -   | -         | 0    |               |
| POMTOPOREIA HOYI                     | 0   | -         | 0    |               |
| ALL AMPHIPODA                        |     |           |      | 275           |

| TRANSECT 8 STATION 3 (CONT'D)    | (        | į            |     |                                       |
|----------------------------------|----------|--------------|-----|---------------------------------------|
| TAXON                            | ğ –      | GRAB COUNTS  | S E | ESTIMATED<br>NO./SQ. METER            |
| SOPODA<br>ASELII                 | •        | :            |     | # # # # # # # # # # # # # # # # # # # |
|                                  | •        | <del>-</del> | >   |                                       |
| LIRCEUS                          | 0        | ~            | 0   |                                       |
| ALL ISOPODA                      |          |              |     | <b>a</b> c -                          |
| DIDIES                           |          |              |     | <u>}</u>                              |
| CERATOPOGONIDAE                  | c        | (*           | -   |                                       |
| CHIRONOMIDAE<br>ALL DIPTERA      | 205      | 228          | 106 | 3712<br>3739                          |
| EPHEMEROPTERA                    |          |              |     |                                       |
| CAENIDAE                         |          |              |     |                                       |
| CAENIS                           | <b>5</b> | 16           | -   |                                       |
|                                  |          |              |     |                                       |
| EPHEMERIDAE                      |          |              |     |                                       |
| HEXAGENIA                        | 19       | 6            | Ξ   |                                       |
| ALL EPHEMEROPTERA                |          |              |     | 448                                   |
| LEPIDOPTERA                      | -        | 0            | 0   | 7                                     |
| TRICHOPTERA                      |          |              |     |                                       |
| MYDROPSYCHIDAE<br>Cheumatopsyche | c        | -            | c   |                                       |
|                                  | •        | •            | >   |                                       |
| LEPTOCERIDAE                     | •        | ,            |     |                                       |
|                                  | 0        | -            | 0   |                                       |
| TRIAENODES                       | -        | -            | 0   |                                       |
| DOI YORNTBORDOTOAR               |          |              |     |                                       |
| NEURECLIPSIS                     | -        | С            | c   |                                       |
|                                  |          | •            | •   |                                       |
| POLYCENTROPUS                    | 8        | -            | 0   |                                       |
| ALL TRICHOPTERA                  |          |              |     | 69                                    |
| DOGNATA                          |          |              |     |                                       |
| GOMPHIDAE                        |          |              |     |                                       |
| COMPILIS                         | ٥        | -            | 0   | 7                                     |
|                                  |          |              |     |                                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |   |              |      | 5/8/84        |
|---------------------------------------|---|--------------|------|---------------|
| TRANSECT 8 STATION 3 (CONT'D)         | ā | SDAB COMMITE | EM F |               |
| TAXON                                 | - | ,<br>,       | 9 69 | NO./SQ. METER |
| ACARINA                               | 0 | 4            | 0    | 28            |
| GASTROPODA                            | ; | 1            |      |               |
| ANI COLA                              | 5 | 31           | 31   |               |
| PHYSA                                 | 8 | -            | 0    |               |
| VALVATA SINCERA                       | 0 | -            | 0    |               |
| ALL GASTROPODA                        |   |              |      | 909           |
| PELECYPODA<br>COMASO I DAE            |   |              |      |               |
| MIDISIA                               | - | ស            | ო    | 62            |
| ALL PELECYPODA                        |   |              |      | 62            |

|                                      |          |             |             | 10 (0)                  |
|--------------------------------------|----------|-------------|-------------|-------------------------|
| ST. CLAIR RIVER TRANSECT 9 STATION 1 |          |             |             |                         |
| TAXON                                | GRA<br>- | 8<br>8<br>8 | GRAB COUNTS | ESTIMATED NO./SO. METER |
| CNIDARIA                             | 1        |             |             |                         |
| HYDRA                                | 0        | 17          | 11          | 234                     |
| ALL CNIDARIA                         |          |             |             | 234                     |
| RHABDOCOELA                          | o        | o           | ស           | 158                     |
| TRICLADIDA                           | -        | 0           | -           | 4                       |
| NEMERTINEA                           | €        | -           | 0           | 62                      |
| NEMATODA                             | 56       | 50          | 98          | 1129                    |
| OLIGOCHAETA<br>Spirosperma           | 8        | 80          | ø           |                         |
| OTHER<br>ALL OLIGOCHAETA             | 242      | 211         | 85          | 4401                    |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA    | 930      | 318         | 363         | 5785                    |
| ALL POLYCHAETA                       |          |             |             | 5785                    |
| COPEPODA                             | 0        | 8           | 0           | <b>‡</b>                |
| ALL COPEPODA                         |          |             |             | =                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |      |             |           | 5/15/84       |
|---|------|-------------|-----------|---------------|
| TRANSECT 9 STATION 1 (CONT'D)                             | GRAE | GRAB COUNTS | 115       | ESTIMATED     |
| TAXON   | -    | 7           | 6         | NO./SQ. METER |
| AMPHI PODA<br>GAMMARUS                                    | 58   | 94          | 38        |               |
| HYALELLA AZTECA   | 24   | 31          | 20        |               |
| ALL AMPHIPODA   |      |             |           | 1825          |
| ISOPODA<br>ASELLUS  | ĸ    | 4           | -         |               |
| 1.385813  | Ø    | 23          | 9         |               |
| ALL ISOPODA   |      |             |           | 399           |
| TERRESTRIAL INSECT  | •    | 0           | 7         | 21            |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 101  | 22          | 74<br>139 | 2486<br>3340  |
| EPHEMERODTERA<br>Caentdae<br>Caents                       | 46   | 56          | 67        |               |
| EPHEMERIUAE<br>HEXAGENIA                                  | -    | 0           | ~         |               |
| EPHEMERELLIDAE<br>EPHEMERELLA                             | 0    | 0           | -         |               |
| AN I ROMEMEROPOTERA                                       |      |             |           | 902           |

| GRAB COUNTS  A  DAE  ES  TO B 1  TO DO B 1  TO DO DO DO DO DO  TO DO   |   |               |                       |          | 13/64   |
|--|---|---------------|-----------------------|----------|---|
| A E S S S S S S S S S S S S S S S S S S  | TRANSECT 9 STATION ( CONT'D)            |               |                       | ,        |   |
| A ES 3  OPODIDAE  NOPTERA  AE  TI 1 3  TENIDAE  TES  A 5 3  A 5 3  A 6 5 3  A 7 6  A 6 6 3  A 7 6  A 7 6  A 7 7 6  A 7 7 7 6  A 8 1 1 3  A 1 1 4 3  A 1 4 4 0  A 1 4 6  A 1 6 6  A 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7  |   | - 6X          | 2<br>2<br>3<br>8<br>8 | იო       | NO./SQ. METER   |
| DAE<br>ES<br>  |   | 1 1 1 1 1 1 1 | !<br>!<br>!<br>!      | <br>     | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| PODDIDAE  ROPUS  | LEPTOCERIDAE                            |               |                       |          |   |
| OPODIDAE  ROPUS  TO OPODIAE  AE  TO OPODIA   | MYSTACIDES                              | 0             | 80                    | _        |   |
| OPODDAE  ROPUS OPTERA  AE  T 3 1 1  T 3 1  T 3 5  T 1 3 5  T 3 6  T 3 8 7  T 3 8 7  T 3 8 7  T 3 8 7  T 3 8 7  T 3 8 7  T 3 8 7  T 3 8 7  T 4 3 8  T 7   |   |               |                       |          |   |
| OPODIDAE ROPUS OPTERA AE 1   | OECET1S                                 | 4             | r.                    | <b>6</b> |   |
| OPODDAE  OPTERA  OPODA  OPTERA  OPODA  OPTERA  | 1111111                                 |               |                       |          |   |
| OPODIDAE  OPTERA  OPODA  AE  Table 1  Table 2  Table 2  Table 3  Table 4  Table 4  Table 5  Table 5  Table 5  Table 5  Table 5  Table 5  Table 6  Table 6  Table 6  Table 6  Table 7  Table 6  Table 7  T   | SETODES                                 | -             | 4                     | 0        |   |
| OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OPODA<br>OP | • |               |                       |          |   |
| AE 1 1 3 1 1 3 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 1 3 1 1 1 1 3 1 1 1 1 3 1 1 1 1 3 1 1 1 1 3 1 1 1 1 1 3 1 1 1 1 1 3 1 1 1 1 1 3 1 1 1 1 1 3 1 1 1 1 1 3 1 1 1 1 1 3 1   | POLYCENTROPOOIDAE                       |               |                       |          |   |
| OPDERA  AE  FRIIDAE  | POLYCENTROPUS                           | -             | 0                     | 0        |   |
| OPODA  OPODA  AE  13 9 1  1 3 3  1 1 3  1 1 3  | 7 0 1 0 0 1 0 E 0 1 0 E 0 1 0 E 0 1     |               |                       |          |   |
| OPODA  OPODA  T 3 1 1  AE  AE  T 3 9 1  T 1 3 9 1  T 1 3 9 1   | ALL TRICHOPTERA                         |               |                       |          | 186   |
| OPODA  AE  13 9 1  1 1 3  ERRIDAE  | ACARINA                                 | 6             | -                     | _        | 34  |
| OPODA  AE  1 3 0  1 3 0  1 3 1  1 1 3 1  1 1 3 1  1 1 3 9 1  | GASTROPODA                              |               |                       |          |   |
| 1 3 0<br>1 3 1<br>AE  AE  13 9 1  1 1 3  | AMICOLA                                 | 0             | 7                     | 0        |   |
| 0PODA AE AE 13 9 1 1 1 3 ERIIDAE   | 1 1 1 1 1 1 1 1                         |               | ı                     |          |   |
| 0PODA AE AE 13 9 1 A 1 1 3 ERRIDAE   | GYRAULUS                                | -             | 6                     | 0        |   |
| OPODA  AE  13 9 1  THIDAE  |   |               |                       |          |   |
| OPODA  AE  13 9 1  M  1 1 3  ERIIDAE   | PHYSA                                   | -             | <b>e</b>              | _        |   |
| AE 13 8 1 1 3 6 1 1 3 6 1 1 1 3 6 1 1 1 3 6 1 1 1 1  | AL GASTROPODA                           |               |                       |          | 76  |
| AE 13 9 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 1  | PELECYPODA                              |               |                       |          |   |
| 13 99 1 1 1 3 AE   | SPHAERIIDAE                             |               |                       |          |   |
| 1 1 3<br>AE  | PISIDIUM                                | 13            | <b>o</b>              | _        |   |
| 1 1 3<br>AE  | 1 3 4 7 6 4 8 7                         |               |                       |          |   |
| <b>A</b> E   | SPHAERIUM                               | _             | -                     | 6        |   |
| AE   | * 1 2 5 6 6                             |               |                       |          |   |
|  | ALL SPHAERIIDAE                         |               |                       |          | 193   |

| ECIOSA<br>FIDATUS  | ST. CLAIR RIVER TRANSECT 9 STATION 2 |              |    |          |                           |
|--|--------------------------------------|--------------|----|----------|---------------------------|
| A SPECIOSA 12 20 37  A 0 0 1  RMA  IA SPECIOSA 3 4 6  CHAETA 3 4 6  TA SPECIOSA 0 2 5  HAETA 0 0 2 0  SERA  ANUS  ANUS  ANUS  ANUS  AZTECA 0 1 1  THOMA  |                                      | GRAE         | g~ | MTS<br>3 | ESTIMATED<br>NO./SQ. METE |
| A SPECIOSA 12 20 37  A 0 0 1  BMA  14 6 6  CHAETA 0 2 5  HAETA 0 2 5  HAETA 0 2 0  CERA  S 2 12 1  H 6 8  AZTECA 0 1 1 1   | 1                                    | •            | 0  | -        | 7                         |
| 12 20 37  RMA  TAMETA  IA SPECIOSA  OCERA  BICUSPIDATUS  ODA  12 20 37  27 23 50  14 6  16 0 0  16 2 5  18 23 2  18 23 2  19 10  10 0 1  11 0 0  10 0 1  11 0 0  11 0 0  | ALL CNIDARIA                         |              |    |          | 7                         |
| AMAETA  BICUSPIDATUS  CERA  ANUS  1 6 8  1 6 0 1  27 23 50  1 7 0 0  1 0 0  | NEMATODA                             | 12           | 20 | 37       | 475                       |
| CHAETA  CHAETA  LA SPECIOSA  LA SPECIOSA  LA SPECIOSA  O 2 5  HAETA  T 0 0  CERA  ANUS  ANUS  ANUS  T 6 8  T 6 8  T 7 23 50  T 0 0  T 0 0  T 0 0  T 0 0  T 0 0  T 0 0  T 0 0  T 0 0  T 0 0  T 1 1  T 0 0  T 0 0  T 1 1  T 0 0  T 0 0  T 1 1  T 0 0  T 0 | OLIGOCHAETA<br>Nais                  | ٥            | 0  | -        |                           |
| CERA  BICUSPIDATUS  ANUS  AZTECA  CHAETA  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 1 0 0  | <br>Spirosperma                      | е            | 4  | ø        |                           |
| IA SPECIOSA       0       2       5         HAETA       1       0       0         CERA       1       0       0       0         BICUSPIDATUS       0       2       0       0       2       0         ANUS       1       6       8       1       6       8         AZTECA       0       1       <  | OTHER<br>ALL OLIGOCHAETA             | 27           | 23 | 50       | 785                       |
| DOCERA  BICUSPIDATUS  BICUSPIDATUS  15 23 2  15 23 2  16 23 2  16 23 2  17 6 8  1 6 8  1 1 1  19 00 0  1 1 1   | <b>ĕ¦</b> ≸                          | 0            | 8  | ம        | 4 4<br>80 80              |
| S BICUSPIDATUS 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0   | CLADOCERA DAPHNIAAL CLADOCERA        | <del>-</del> | 0  | 0        |                           |
| 15 23 2 LANUS PODA  A AZTECA  O 1 1 LANUS  1 6 8  1 7 6 8  1 8 8  1 9 9  | COPEPODA<br>CYCLOPS BICUSPIDATUS     | 0            | 8  | 0        |                           |
| LANUS 2 12 1 LANUS 2 12 1 PODA S 4 AZTECA 0 1 1 IPODA  | DIAPTOMUS                            | 5            | 23 | 8        |                           |
| S  | LIMNOCALANUS                         | 8            | 2  | -        | 383                       |
| ECA 0 1 1  | AMPHI PODA<br>Gammarus               | -            | 9  | €        |                           |
|  | HYALELLA AZTECA                      | 0            | -  | -        | 117                       |

B 401

C

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |    | 5/15/84       |
|---------------------------------------|------|-------------|----|---------------|
| TRANSECT 9 STATION 2 (CONT'D)         | GRAB | GRAB COUNTS | 15 | ESTIMATED     |
|                                       | -    | 7           | 6  | NO./SQ. METER |
| OIPTERA<br>CHIRONOMIDAE               | φ    | 7           | 4  | 186           |
| EPHEMEROPTERA<br>Caenidae<br>Caenis   | 0    | ĸ           | -  |               |
| ALL EPHEMEROPTERA                     |      |             |    | 21            |
| ACARINA                               | 0    | ď           | -  | <b>5</b>      |
| GASTROPODA<br>AMNICOLA                | М    | 0           | ~  | <b>38</b>     |
| ALL GASTROPODA                        |      |             |    | 28            |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | 2    | g           | 4  | 207           |
| ALL PELECYPODA                        |      |             |    | 207           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |            |             |     | 5/15/84       |
|---|------------|-------------|-----|---------------|
| ST. CLAIR RIVER TRANSECT 9 STATION 3      | GRAB       | GRAB COUNTS | STS | ESTIMATED     |
| TAXON                                     | - }        | 8           | e . | NO./SQ. METER |
| RHABDOCOELA                               | ~          | 0           | 0   | 7             |
| NEMATODA                                  | ø          | 53          | æ   | 296           |
| OLIGOCHAETA<br>Spirosperma                | -          | 6           | 5   |               |
| OTHER<br>ALL OLIGOCHAETA                  | Ξ          | Ξ           | 8   | 262           |
| POLYCHAETA MANAYUNKIA SPECIOSA            | 0          | -           | 0   |               |
| CLADOCERA<br>DAPHNIA<br><br>ALL CLADOCERA | -          | 0           | ٥   |               |
| COPEPODA<br>CYCLOPS BICUSPIDATUS          | -          | 0           | ~   |               |
| DIAPTOMUS                                 | 28         | <b>E</b> O  | 7   |               |
| EURYTEMORA                                | 0          | -           | 0   |               |
| HARPACTICOIDA                             | 0          | -           | 0   |               |
| LIMNOCALANUS                              | <b>5</b> 0 | 4           | 4   |               |
| ALL COPEPODA                              |            |             |     | 455           |

DSTRACODA

| TRANSECT 9 STATION 3 (CONT'D) |            | 2     |            |                |
|-------------------------------|------------|-------|------------|----------------|
| TAXON                         | - 6        | 1 2 3 | <u>ი</u> ი | NO./SQ. METER  |
| AMPHIPODA                     |            | -     |            | ;<br>          |
| GAMMARUS                      | က          | 0     | 7          | 34             |
| ALL AMPHIPODA                 |            |       |            | 34             |
| DIPTERA<br>CHIRONOMIDAE       | φ          | 4     | ഗ          | 103            |
| GASTROPODA                    |            |       |            |                |
| AMNICOLA                      | ~          | 0     | 0          |                |
| ELIMIA LIVESCENS              | +          | 0     | 0          |                |
| ALL GASTROPODA                |            |       |            | 21             |
| PELECYPODA                    |            |       |            |                |
| PISIDIUM                      | <b>6</b> 0 | ၉     | Ø          |                |
| SPHAERIUM                     | 0          | -     | 0          |                |
| ALL SPWAERIIDAE               |            |       |            | 24<br>04<br>24 |
|                               |            |       |            | )<br>!         |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA                      |        |       |                | 5/15/84       |
|--|--------|-------|----------------|---------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 1                      | 0      | Č     |                |               |
| TAXON  | - CKAD | 4 2 3 | <u>ი</u> ლ     | NO./SQ. METER |
| NEMATODA   | -      | 0     | -              | 4             |
| OLIGOCHAETA  | , es   | 8     | -              | 14            |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                           | c      | -     | c              |               |
| DIAPTOMIS  |        | ٠ (   | , <del>-</del> |               |
|  | • :    | •     | - :            |               |
| LIMMOCALANUS   | =      | 7     | 9              |               |
| ALL COPEPODA   |        |       |                | 248           |
| AMPHIPODA  | ,      | 1     | 1              | ,             |
| GAMMARUS   | -      | 0     | 0              | 7             |
| ALL AMPHIPODA  |        |       |                | 7             |
| TERRESTRIAL INSECT   | -      | 0     | -              | 4-            |
| ULF IERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | - 0    | 0 0   | 88             | 41            |
| PELECYPODA<br>SPHAERIDAE<br>PISIDIUM                       | ო      | 7     | 0              | 6.<br>4.      |
| ALL PELECYPODA   |        |       |                | . 96          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                   |              |             |           | 5/15/84                 |
|---|--------------|-------------|-----------|-------------------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 2                   |              |             |           |                         |
| TAXON   | <b>8</b> 8 ← | GRAB COUNTS | UNTS<br>3 | ESTIMATED NO./SQ. METER |
| COELA   | 0            | -           | 0         | 7                       |
| NEMATODA  | 5            | 24          | Ξ         | 310                     |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>GLOSSIPHONIA HETEROCLITA | •            | 0           | 0         | t                       |
| ALL HIRUDINEA   |              |             |           |                         |
| OL I GOCHAETA<br>Spirosperma                            | 37           | 37          | <b>38</b> |                         |
| OTHER<br>ALL OLIGOCHAETA                                | <b>8</b>     | 80<br>80    | 122       | 2479                    |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA                       | 7            | 21          | 7         | 172                     |
| ALL POLYCHAETA  |              |             |           | 172                     |
| CLADOCERA<br>DAPHNIA                                    | 6            | 0           | <b>-</b>  | <b>58</b>               |
| ALL CLADOCERA   |              |             |           | 28                      |
| CYCLOPS BICUSPIDATUS                                    | -            | •           | 6         |                         |
| DIAPTOMUS   | 9            | ო           | ø         |                         |
| LIMNDCALANUS  | 23           | Ξ           | 8         |                         |
| ALL COPEPODA  |              |             |           | 379                     |
| OSTRACODA   | -            | 0           | 0         | 1                       |

| 5/15/6 |
|--------|
| ŝ      |
|        |
|        |
|        |
|        |
|        |
| _      |
| DATA   |
| COUNT  |
| GRAB   |
| PONAR  |
| HOS    |

| TRANSECT 10 STATION 2 (CONT.D)          |          |            |             |     |
|---|----------|------------|-------------|-----|
| TAXON                                   |          | 8 CO       | GRAB COUNTS | -   |
| AMPHIPODA<br>Gammarus                   | 0        | . 0        | -           | 7   |
| ALL AMPHIPODA                           |          |            |             |     |
| DIPTERA<br>CHIRONOMIDAE                 | 38       | 8          | 9           | 813 |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS<br> | 0        | •          | 0           | ,   |
| TRICHOPTERA<br>LEPTOCERIDAE<br>CERACLEA | <b>-</b> | 0          | 0           | ٠ ، |
| ACARINA                                 | 0        | -          | 0           |     |
| GASTROPODA<br>Amnicola                  | Ē.       | •          | 8           |     |
| 1                                       | 0        | -          | 8           |     |
| GYRAULUS                                | 7        | 0          | 0           |     |
| PHYSA                                   | ٥        | 0          | -           |     |
| ALL GASTROPODA                          |          |            |             | 213 |
| PELECYPODA<br>SPHAERIDAE<br>PISIDIUM    | ē        | <b>6</b> 0 | 6           | 289 |
| ALL PELECYPODA                          |          |            |             | 289 |

| IR RIVER                  |                       |     |             |      |               |
|---------------------------|-----------------------|-----|-------------|------|---------------|
| 14004+                    | TRANSECT 10 STATION 3 | GRA | GRAB COUNTS | INTS | ESTIMATED     |
| AXUN                      |                       | -   | ~           | 6    | NO./SQ. METER |
| RHABDOCOELA               |                       |     | -           | 0    | 4             |
| NEMATODA                  |                       | 12  | 8           | 33   | 448           |
| OLIGOCHAETA               |                       |     |             | ٠    |               |
| SPIROSPERMA               |                       | е   | 7           | 0    |               |
| OTHER<br>ALL OLIGOCHAETA  |                       | 38  | 78          | 25   | 1040          |
| POLYCHAETA                |                       |     |             |      |               |
| ¥1                        | SA                    | 0   | 0           | 6    | 21            |
| ALL POLYCHAETA            | 1 2                   |     |             |      | 5             |
| CLADOCERA                 |                       |     |             |      |               |
| BOSMINA                   |                       | -   | 0           | 0    | 7             |
| ALL CLADOCERA             |                       |     |             |      | •             |
|                           |                       |     |             |      |               |
| CYCLOPS BICUSPIDATUS      | TUS                   | -   | 0           | -    |               |
| DIAPTOMUS                 |                       | 6   | -           | 7    |               |
| I TRACOCAL ANDS           |                       | ţ   | u           | •    |               |
| THE STREET                |                       | !   | ,           | •    | Ġ             |
| ארר כסובוססא              |                       |     |             |      | 728           |
| DIPTERA                   |                       | \$  | c           | u    | Ç             |
|                           |                       | 4   | 4           | ,    | 2             |
| EPHEMEROPTERA<br>CAENTDAF |                       |     |             |      |               |
| CAENIS                    |                       | 0   | 0           | -    |               |
|                           |                       |     |             |      |               |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA  |      |             | 5/15/84                    |
|--|------|-------------|----------------------------|
| TRANSECT 10 STATION 3 (CONT'D) TAXON   | GRA8 | GRAB COUNTS | ESTIMATED<br>No./SQ. METER |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OECETIS | 0    | •           | 1                          |
| ALL TRICHOPTERA                        |      |             | ۲                          |
| GASTROPODA                             | 8    | 9           |                            |
| GYRAULUS                               | 0    | 0           |                            |
| ALL GASTROPODA                         |      |             | 158                        |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM  | 11   | 4           | 158                        |
| ALL PELECYPODA                         |      |             | 158                        |

| MACKUZUUBENIMUS PUNAK GRAB CUUNI DAIA                   |        |             |     | 5/15/84       |
|---|--------|-------------|-----|---------------|
| LAKE ST. CLAIR TRANSECT 11 STATION 1                    | œ<br>œ | GRAB COUNTS | STN | ESTIMATED     |
| TAXON   | -      | 7           | 6   | NO./SQ. METER |
| RHABDOCOELA   | 6      | 0           | 7   | 34            |
| NEMATODA  | 96     | 41          | 9   | 1260          |
| HIRUDINEA<br>GLOSSIPHONIIOAE<br>HELOBDELLA ELONGATA<br> | N      | 0           | •   | ‡             |
| OLIGOCHAETA<br>SPIROSPERMA                              | 0      | 0           | а   |               |
| OTHER<br>ALL OLIGOCHAETA                                | 234    | 129         | 37  | 2768          |
| MANAYUNKIA SPECIOSA                                     | 60     | 6           | ā   | 799           |
| ALL POLYCHAETA  |        |             |     | 199           |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                        | 0      | 0           | m   |               |
| DIAPTOMUS   | 0      | 0           | 8   |               |
| HARPACTICOIDA   | 0      | 0           | -   |               |
| LIMMOCALANUS  | -      | 0           | 0   |               |
| ALL COPEPODA  |        |             |     | 84            |
| OSTRACODA   | ŧ.     | ဓ           | 21  | 455           |
| AMPHI PODA<br>GAMMARUS                                  | Ø      | 27          | •   | 303           |
| ALL AMPHIPODA   |        |             |     | 303           |

| r  |     |    |
|----|-----|----|
| ĸ. | •   | •  |
| 1  | - 3 |    |
| 9  |     |    |
|    |     | ж. |
| ٦  |     | ×  |
|    | •   | _  |
|    |     |    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |          |              |       | 5/15/84                 |
|---|----------|--------------|-------|-------------------------|
| TRANSECT 11 STATION 1 (CONT'D)            |          |              |       |                         |
|   | 98.<br>- | GRAB COUNTS  | STATE | ESTIMATED NO./SQ. METER |
| TERRESTRIAL INSECT                        | -        | 0            | 0     | 7                       |
| DIPTERA<br>CHIRONOMIDAE                   | <b>.</b> | 52           | 76    | 1439                    |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>FEXAGENIA | 129      | 8            | 126   |                         |
| ALL EPHEMEROPTERA                         |          |              |       | 2390                    |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OECETIS    | -        | -            | -     |                         |
| ALL TRICHOPTERA                           |          |              |       | 21                      |
| ACARINA                                   | 0        | 0            | -     | 7                       |
| GASTROPODA<br>AMNICOLA                    | -        | -            | 0     |                         |
| ELIMIA LIVESCENS                          | -        | 0            | 0     |                         |
| GYRUS                                     | -        | 0            | 0     |                         |
| VALVATA TRICARINATA                       | 0        | -            | 0     |                         |
| ROPODA                                    |          |              |       | . 46                    |
| PELECYPODA<br>SPHAERIIDAE<br>PISIOLM      | 4        | <del>.</del> | 4     |                         |
| SPHAERIUM                                 | 0        | 0            | -     |                         |
| RIIDAE                                    |          |              |       | 44.                     |
| LAMPSILIS RADIATA SILIQUOIDEA             | ٥        | 0            | -     |                         |
| ALL PELECYPODA                            |          |              |       | 448                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                  |             |             |      | 5/15/84        |
|--|-------------|-------------|------|----------------|
| LAKE ST. CLAIR TRANSECT 11 STATION 2                   | <b>∀</b> ae | SEAR COUNTS | STNU | ESTIMATED      |
|  | -           | 8           | . "  | NO./SQ. METER  |
| RHABDOCOELA  |             | R           | 80   | 103            |
| NEMATODA   | 109         | 168         | 210  | 3354           |
| AIRUDINEA<br>GLOSSIPHONIDAE<br>HELOBDELLA ELONGATA<br> | 0           | 0           | -    |                |
| OLIGOCHAETA  | 615         | 551         | 619  | 12706          |
| POLYCHAETA MANAYUNKIA SPECIOSA                         | •           | 24          | •    | 59<br>53<br>53 |
| CLADOCERA<br>ILYOCRYPTUS<br><br>ALL CLADOCERA          | 0           | а           | ٥    | 4 4            |
| DSTRACODA  | ဇ           | <b>60</b>   | 6    | 207            |
| AMPHI PODA<br>GAMMARUS                                 | 10          | 4           | m    |                |
| HYALELLA AZTEGA<br>                                    | -           | 0           | •    | 06             |
| DIPTERA<br>CHIRGNOMIDAE                                | 36          | 90          | 24   | 758            |

| MACROZODBENTHOS PONAR GRAB COUNT DATA                       |    |       |     | 5/15/84                                 |
|---|----|-------|-----|---|
| TRANSECT 11 STATION 2 (CONT'D)                              | ć  | 2     |     | 4 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 |
| TAXON   | ¥  | 4 2 3 | 200 | NO./SQ. METER                           |
| EPHEMEROPTERA<br>Caenidae<br>Caenis                         | 0  | 0     | -   |   |
| ENEMERIDAE HEXAGENIA  | 11 | 56    | 7.  |   |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OECETIS                      | •  | 0     | -   | !                                       |
| ALL TRICHOPTERA<br>ACARINA                                  | ٥  | -     | ٥   | <b>~</b> ~                              |
| GASTROPODA<br>GYRAULUS<br><br>ALL GASTROPODA                | ٥  | -     | •   | r r                                     |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM<br><br>ALL PELECYPODA | 2  | 36    | 60  | 1274                                    |

B-413

1

| LAKE ST. CLAIR TRANSECT ## STATION 3 GRAB COUNTS   | MACKULOUDENINGS FUNAK GRAB CUUNI DAIA | DATA |                |           | 5/15/84                    |
|--|---------------------------------------|------|----------------|-----------|----------------------------|
| GELA ELONGATA 116 162 13  A HONITDAE ELLA ELONGATA 2 1  LIDAE UDINEA  GETA  CO 0  TA  FETA  CO 0  TA  FETA  A PERMA  TA  MAIS  S BICUSPIDATUS  CO 0  TA  TA  TA  TA  TA  TA  TA  TA  TA  T   |                                       | 6    | 1              |           |                            |
| IIDAE A ELONGATA A ELONGATA A ELONGATA A ELONGATA A ELONGATA A SPECIOSA A SPE | TAXON                                 | 3 ~  | ₽8<br>20<br>20 | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| HONITOAE HONITOAE HONITOAE HONITOAE HONITOAE UDINEA ETA UDINEA ETA COCHAETA TA WKIA SPECIOSA TA   | RHABDOCOELA                           | 9    | 0              | 2         |                            |
| HONITDAE FELLA ELONGATA  LIDAE UDINEA  ETA  ETA  FERMA  GDCHAETA  A  YCHAETA   | NEMATODA                              | 116  | 162            | 131       | 2817                       |
| ELLA ELONGATA  1.1DAE  | HIRUDINEA<br>GLOSSIPHONIIDAE          |      |                |           |                            |
| LIDAE UDINEA UDINEA ETA PERMA PERMA  GOCHAETA  TA  WKIA SPECIOSA  TA  WYANTUS  S BICUSPIDATUS  A ALANUS  CO O  TABLANUS  S BICUSPIDATUS  O B  O O  TA  TA  TA  TA  TA  TA  TA  TA  TA  T   | HELOBDELLA ELONGATA                   | 8    | -              | 0         |                            |
| ETA PERMA  O O  TTO 445 5  GOCHAETA  TA NKIA SPECIOSA  NKIA SPECIOSA  TA T  |                                       | •    | -              | 0         | <b>78</b>                  |
| GOCHAETA 179 445 5 GOCHAETA 16 32 NKIA SPECIOSA 16 32 YCHAETA 3 3 3 YPTUS 3 3 3 YPTUS 3 3 3 WUS 8 6 6 8 6 6 8 6 6 8 6 6 8 6 6 8 6 6 6 8 6 6 6 8 6 6 6 6 8 6 6 6 6 8 6  | OL I GOCHAETA<br>SPIROSPERMA          | •    | 0              | -         |                            |
| GOCHAETA  TA  NKIA SPECIOSA  16 32  VCHAETA  A  YPTUS  DOCERA  BICUSPIDATUS  A  ALANUS  0 8  0 8  C  | 0THER                                 | 779  | 445            | 507       |                            |
| NKIA SPECIOSA 16 32 YCHAETA  A YPTUS  BOCERA S BICUSPIDATUS  C B C C C C C C C C C C C C C C C C C   | ALL OLIGOCHAETA                       |      |                |           | 11928                      |
| YCHAETA  A TATUS  DOCERA  S BICUSPIDATUS  A LANUS  C C C C C C C C C C C C C C C C C C C   | MANAYUMKIA SPECIOSA                   | 91   | 32             | 33        | 55<br>56                   |
| # PTUS  DOCERA  BICUSPIDATUS  BICUSPIDATUS  ALANUS  COBB  COBB  COBB  COBBB  CO | ALL POLYCHAETA                        |      |                |           | 558                        |
| S BICUSPIDATUS 0 8  MUS 0 8  ALANUS 0 8  CLANUS 0 8  EPODA   | CLADOCERA<br>LLYOCRYPIUS              | e    | 60             | 6         | 62                         |
| S BICUSPIDATUS 0 8   | ALL CLADOCERA                         |      |                |           | 62                         |
| <b>8</b> 6 0   | COPEPODA<br>CYCLOPS BICUSPIDATUS      | 0    | •              | 0         |                            |
| S. 0   | DIAPTOMUS                             | 0    | •              | 0         |                            |
| ALL COPEPODA   | LIMNOCALANUS                          | 0    | 8              | 0         |                            |
|  | ALL COPEPODA                          |      |                |           | 124                        |

| MACKUZUUBENIMUS PUNAK GRAB COUNT DATA            |                |             |           | 5/15/84                    |
|--|----------------|-------------|-----------|----------------------------|
| TRANSECT 11 STATION 3 (CONT'D)                   |                |             |           |                            |
| TAXON  | <b>&amp;</b> - | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| OSTRACODA  | -              | 6           | -         | 34                         |
| AMPHI PODA<br>GAMMARUS                           | r              | •           | £         |                            |
| HYALELLA AZTECA                                  | , (            | ,           | , (       |                            |
| ALL AMPHIPODA                                    | •              | ٧           | >         | មា                         |
| DIPTERA<br>CHIRONOMIDAE                          | 28             | 33          | 4         | 702                        |
| EPHEMERO⊬TERA<br>CAENIDAE<br>CAENIS              | 0              | 0           | -         |                            |
| EPHEMERIDAE<br>HEXAGENIA                         | ъ.<br>80       | <b>6</b>    | 09        |                            |
| ALL EPHEMEROPTERA                                |                |             |           | 1377                       |
| TRICHOPTERA LEPTOCERIDAE OECETIS ALL TRICHOPTERA | -              | ٥           | 0         |                            |
| ACARINA  | -              | -           | 0         | 4                          |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM            | <b>0</b>       | 101         | 2         |                            |
| SPHAERIUM  | ო              | 60          | N         |                            |
| ALL SPHAERIIDAE<br>ALL PELECYPODA                |                |             |           | 1336<br>1336               |

B-415

(

|                                    |     |              |     | 10 /1         |
|------------------------------------|-----|--------------|-----|---------------|
| LAKE ST. CLAIR TRANSECT 12 STATION | -   | Š            | 1   | 4444          |
| TAXON                              | - g | 1 2 3        | 2 6 | NO./SQ. METER |
| RHABDOCOELA                        | -   | 6            | 0   | 28            |
| TRICLADIDA                         | ٥   | -            | 0   | 7             |
| NEMATODA                           | 26  | 9            | 4   | 572           |
| OLIGOCHAETA<br>Spirosperma         | 4   | <del>.</del> | Ø   |               |
| OTHER<br>ALL OLIGOCHAETA           | 20  | 27           | 26  | 930           |
| POLYCHAETA MANAYUNKIA SPECIOSA     | 70  | 4            | 22  | 1:64          |
| CLADOCERA DAPHNIA ALL CLADOCERA    | 0   | 8            | •   | 4 4           |
| COPEPODA<br>CYCLOPS VERNALIS       | 0   | 0            | -   |               |
| DIAPTOMUS                          | 0   | *-           |     |               |
| HARPACTICOIDA                      | -   | 60           | -   |               |
| LIMMOCALANUS                       | -   | 4            | ĸ   |               |
| ALL COPEPODA                       |     |              |     | 124           |
| OSTRACODA                          | o   | 22           | 22  | 365           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |    |             |          | 5/ 4/84       |
|--|----|-------------|----------|---------------|
| TRANSECT 12 STATION 1 (CONT'D)             | GR | GRAB COUNTS | STA      | ESTIMATED     |
| TAXON                                      | -  | ~           |          | NO./SQ. METER |
| DA   | 4  | 6           | ø        | 386           |
| ALL AMPHIPODA                              |    |             |          | 386           |
| DIPTERA<br>CHIRONOMIDAE                    | 4  | 20          | 31       | 861           |
| EPHEMERUPTERA<br>EPHEMERIDAE<br>DESCRIPTOR | į  | 9           | ;        |               |
| ALL EPHEMEROPTERA                          | =  | <u> </u>    | <u> </u> | 2300          |
| TRICHOPTERA<br>LEPTOCERIDAE<br>GECETIS     | 8  | 4           | -        |               |
| ALL TRICHOPTERA                            |    |             |          | 48            |
| GASTROPODA<br>AMNICOLA                     | ,  | <b>c</b> o  | <b>m</b> |               |
|  | 0  | -           | 0        |               |
| GYRAULUS                                   | 2  | Ξ           | <b>6</b> |               |
| 1  | 0  | 4           | ო        |               |
| ALL GASTROPODA                             |    |             |          | 461           |
| PELECYPODA<br>Sphaerijoae                  |    |             |          |               |
| PISIDIUM                                   | 17 | 7           | ₩        |               |
| SPHAERIUM                                  | 0  | 0           | 8        |               |
| ALL SPHAERIIDAE ALL PELECYPODA             |    |             |          | 337<br>337    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |              |     | 5/15/84       |
|---|------------|--------------|-----|---------------|
| LAKE ST. CLAIR TRANSECT 12 STATION 2  | 700        | STAILCO BASS | 212 | CCTIMATED     |
| TAXON   | -          | 2 2          | , e | NO./SQ. METER |
|   | 0          | 0            | 6   | 21            |
| NEMATODA  | ត          | 5            | 69  | 682           |
| OLIGOCHAETA<br>Spidnspedma  | c          | -            | •   |               |
| 111111111111111111111111111111111111111   | )          | -            | ٧   |               |
| OTHER<br>ALL OLIGOCHAETA  | 62         | 108          | 233 | 2796          |
| POLYCHAETA<br>Manayunkia speciosa   | <b>I</b> D | Ξ            | ō   | 179           |
| ALL POLYCHAETA  |            |              |     | 179           |
| COPEPODA  |            |              |     |               |
| CYCLOPS VERNALIS  | 0          | ~            | ~   |               |
|   | 0          | -            | 7   |               |
| HARPACTICOIDA   | 0          | 0            | ю   |               |
| LIMNOCALANUS  | თ          | 8            | \$  |               |
| ALL COPEPODA  |            |              |     | 234           |
| OSTRACODA   | 0          | -            | 8   | 21            |
| AMPHI PODA<br>CAMMA BIIC  | •          | c            | ç   | ţ             |
| STATE AND THE PROPERTY OF THE | -          | ٧            | 2   | 2             |
| ALL AMPHIPODA   |            |              |     | 131           |
| DIPTERA   | 23         | 9            | 8   | . 040         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |             | 5/15/84       |
|---------------------------------------|------|-------------|-------------|---------------|
| TRANSECT 12 STATION 2 (CONT'D)        | GRAE | GRAB COUNTS | NTS.        | ESTIMATED     |
| TAXON                                 | -    | ~           | က           | NO./SQ. METER |
| EPHEMEROPTERA                         |      | <br> <br>   | !<br>!<br>! | 1             |
| CAENIDAE                              | 0    | 0           | -           |               |
|                                       | ,    | ,           | b           |               |
| EPHEMERIDAE<br>Hexagenia              | 8    | g           | 8           |               |
|                                       | \$   | 3           | ,           |               |
| ALL EPHEMEROPTERA                     |      |             |             | 1901          |
| TRICHOPTERA                           |      |             |             |               |
| LEPTOCERIDAE                          |      |             |             |               |
| DECETIS                               | ស    | -           | ស           |               |
|                                       |      |             |             |               |
| ALL TRICHOPTERA                       |      |             |             | 91            |
| ACARINA                               | -    | 0           | 0           | ۲             |
| GASTROPODA                            |      |             |             |               |
| AMNICOLA                              | -    | ო           | ស           |               |
| ELIKIA LIVESCENS                      | c    | •           | c           |               |
|                                       | >    | •           | ٧           |               |
| GYRAULUS                              | -    | 0           | 8           |               |
| ALL GASTROPODA                        |      |             |             | 103           |
| PELECYPODA                            |      |             |             |               |
| SPHAERIIDAE                           |      |             |             |               |
| PISIDIUM                              | 7    | 9           | 38          |               |
| SPHAFRIUM                             | c    | c           | -           |               |
|                                       | )    | •           | •           |               |
| ALL SPHAERIIDAE                       |      |             |             | 572           |
| ALL PELECYPODA                        |      |             |             | 572           |

| MACKUZUUBENIHUS PUNAR GRAB COUNT DATA               |                |              |      | 5/15/84                | 4 |
|---|----------------|--------------|------|------------------------|---|
| LAKE ST. CLAIR TRANSECT 12 STATION 3 TAXON          | & <del>-</del> | GRAB COUNTS  | UNTS | ESTIMATED NO 750 METER |   |
| TRICLADIDA  | 0              | -            | 0    | 7                      |   |
| NEMATODA  | 5              | 63           | 21   | 661                    |   |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELDROFILA FLONGATA | c              | -            | -    |                        |   |
| HELOBDELLA STAGNALIS                                | 0              | <del>-</del> | - 0  |                        |   |
| ALL HIRUDINEA                                       |                |              |      | 21                     |   |
| OLIGOCHAETA<br>Spirosperma                          | -              | е            | 60   |                        |   |
| OTHER<br>ALL OLIGOCHAETA                            | 149            | 383          | 60   | 4421                   |   |
| POLYCHAETA<br>Manayunkia speciosa                   | ស              | 25           | o    | 269                    |   |
| ALL POLYCHAETA                                      |                |              |      | 269                    |   |
| COPEPODA<br>CYCLOPS VERNALIS                        | 0              | -            | 0    |                        |   |
| DIAPTONUS   | Ø              | S.           | 8    |                        |   |
| HARPACTICOIDA                                       | 0              | 42           | 6    |                        |   |
| LIMNOCALANUS  | 60             | 6            | -    |                        |   |
| ALL COPEPODA  |                |              |      | 303                    |   |
| OSTRACODA   | 0              | 4            | 0    | 28                     |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |            |   |              | 5/15/84       |
|---|------------|---|--------------|---------------|
| TRANSECT 12 STATION 3 (CONT'D)            | ê          | 0 400 O O O O O O O O O O O O O O O O O | e la company | 721144160     |
| TAXON                                     | <b>5</b> – | 5 %                                     | e e          | NO./SQ. METER |
| AMPHI PODA<br>Gammarus                    | -          | 5                                       | 8            | 103           |
| ALL AMPHIPODA                             |            |   |              | 103           |
| ISOPODA<br>ASELLUS                        | 0          | -                                       | 0            | ٢             |
| ALL ISOPODA                               |            |   |              | r             |
| TERRESTRIAL INSECT                        | -          | 0                                       | 0            | ٢             |
| DIPTERA<br>CHIRONOMIDAE                   | £          | 62                                      | 46           | 957           |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA | <u>.</u>   | 7                                       | 79           |               |
| ALL EPHEMEROPTERA                         |            |   |              | 1660          |
| TRICHOPTERA<br>LEPTOCERIDAE<br>DECETIS    | -          | R                                       | -            |               |
| ALL TRICHOPTERA                           |            |   |              | 84            |
| ACARINA                                   | 8          | •                                       | 0            | . 4           |
| GASTROPODA<br>AMNICOLA                    | 0          | 8                                       | 0            |               |

B-421

Ĩ.

عجين رهينه والاراداد

96

GYRAULUS
VALVATA TRICARINATA
ALL GASTROPODA

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |   |              | 5/15/84          |
|---|---|--------------|------------------|
| TRANSECT 12 STATION 3 (CONT'D)          | 9400                                    | STATION BAGS | 20 H 4 M 1 H 2 M |
| TAXON                                   | -                                       | 1 2 3        | NO./SQ. METER    |
| PELECYPODA                              | 1 | <br>         |                  |
| SPHAERIIDAE                             |   |              |                  |
| PISIDIUM                                | 18                                      | 64 16        | 675              |
| f 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 |   |              |                  |
| ALL PELECYPODA                          |   |              | 675              |

| 5/ 4/84                               |  |
|---------------------------------------|--|
|                                       |  |
|                                       |  |
| T DATA                                |  |
| MACROZOGBENTHOS PONAR GRAB COUNT DATA |  |
| PONAR                                 |  |
| OBENTHOS                              |  |
| <b>3020</b> 2                         |  |
| Ŭ<br>¥                                |  |

| LAKE ST. CLAIR TRANSECT 13 STATION 1     |          |             |          |                            |
|--|----------|-------------|----------|----------------------------|
| TAXON                                    | GRA<br>+ | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                              | 0        | 0           | -        | 7                          |
| NEMATODA                                 | 12       | 9           | 12       | 372                        |
| OLIGOCHAETA                              | <b>6</b> | 33          | 22       | 503                        |
| POLYCHAETA SPECTORA                      | c        | •           | •        | ŧ                          |
| 40077410 4740747411111111111111111111111 | Þ        | >           | ~        | ŝ                          |
| ALL POLYCHAETA                           |          |             |          | 69                         |
| COPEPODA<br>CYCLOPS BICUSPIDATUS         | -        | -           | 0        |                            |
| DIAPTOMUS                                | ~        | œ           | Œ        |                            |
|  | 1        | •           | )        |                            |
| HARPACTICOIDA                            | 4        | 7           | 0        |                            |
| LIMNOCALANUS                             | -        | 0           | 0        |                            |
| ALL COPEPODA                             |          |             |          | 172                        |
| OSTRACODA                                | ø        | φ           | _        | 131                        |
| AMPHIPODA                                |          |             |          |                            |
| GAMMARUS                                 | . 7      | 7           | 4        | <b>06</b>                  |
| ALL AMPHIPUDA                            |          |             |          | 06                         |
| DIPTERA<br>CHIRONOMIDAE                  | 5        | €           | 28       | 6.1                        |

| ď        | S COL                      | SIN           | ESTIMATED  |
|----------|----------------------------|---------------|--|
| -        | 7                          | 6             | NO./SO. METER  |
| - 60     | 16                         | 87            |  |
|          |                            |               | 1853   |
| 4        | ស                          | -             |  |
|          |                            |               | 69   |
| -        | 0                          | 0             | <b>,</b>   |
| ო        | 6                          | ø             |  |
| 0        | -                          | 0             |  |
| <b>6</b> | 0                          | 0             |  |
| 0        | -                          | 0             |  |
|          |                            |               | 117  |
|          |                            |               |  |
| ø        | 33                         | 17            |  |
| 0        | -                          | 0             |  |
|          |                            |               | 393<br>393   |
|          | 23-<br>23-<br>24- 60 60 60 | GRAB COU<br>1 | RAB COUNT<br>9 1 9 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |     |         |            | 5/ 4/84                    |
|--|-----|---------|------------|----------------------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 2 TAXON | - G | GRAB CO | COUNTS     | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                          | -   | ٥       | 0          | 7                          |
| ALL CNIDARIA                               |     |         |            | 7                          |
| RHABDOCDELA                                | -   | 0       | m          | 28                         |
| NEMATODA                                   | 62  | 5       | 27         | 723                        |
| OL I GOCHAETA<br>SP I ROSPERMA             | m   | 0       | •          |                            |
| OTHER<br>ALL OLIGOCHAETA                   | 350 | 165     | 102        | 4277                       |
| POLYCHAETA MANAYUWKIA SPECIOSA             | រភ  | 4       | NO.        | 60 60<br>60 60             |
| _  | m   | 0       | 8          |                            |
| DIAPTOMUS                                  | -   | 0       | 6          |                            |
| HARPACTICOIDA                              | 4   | 0       | <b>K</b> D | 124                        |
| OSTRACODA                                  | 4   | -       | 4          | 62                         |
| AMPHI PODA<br>GAMMARUS                     | 94  | n       | 5          |                            |
| MYALELLA AZTECA .                          | -   | •       | ٥          |                            |
| ALL AMPHIPODA                              |     |         |            | 351                        |

Ţ

8-425

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |     |             |            | 5/ 4/84                    |
|---|-----|-------------|------------|----------------------------|
| T 13 STATION 2 (CONT'D                                    | GR/ | GRAB COUNTS | JNTS<br>3  | ESTIMATED<br>NO./SQ. METER |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIROMOMIDAE<br>ALL DIPTERA | 62  | 380         | - 0        | 1005                       |
| EPHEMEROPTERA<br>Caenidae<br>Caenis                       | 0   | -           | ٥          |                            |
| EPHEMERIDAE<br>HEXAGENIA<br>ALL EPHEMEROPTERA             | 69  | 74          | 101        | 1729                       |
| TRICHOPTERA LEPTOCERIDAE OECETIS ALL TRICHOPTERA          | 0   | •           | <b>s</b> n | ‡                          |
| ACARINA   | 0   | -           | 0          | ۲                          |
| GASTROPODA<br>AMNICOLA                                    | 1   | 0           | 0          |                            |
| 1   | -   | 0           | 0          |                            |
| GYRAULUS  | 4   | <b>40</b>   | 0          |                            |
| VALVATA TRICARINATA                                       | -   | 0           | 0          |                            |
| ALL GASTROPODA  |     |             |            | 145                        |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                     | 38  | 27          | 2          |                            |
| SPHAERIUM   | -   | <b>L</b> D  | 6          |                            |
| ALL SPHAERIIDAE . ALL PELECYPODA                          |     |             |            | 654<br>654                 |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA      |      |             |      | 5/ 4/84                    |
|--|------|-------------|------|----------------------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 3 TAXON | GRAI | GRAB COUNTS | JNTS | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                                | 0    | 0           | -    | 7                          |
| NEMATODA                                   | -    | 22          | 21   | 303                        |
| OLIGOCHAETA                                | 2    | 83          | 29   | 1178                       |
| POLYCHAETA<br>Manayunkia speciosa          | 0    | NO.         | 8    | 4                          |
| ALL POLYCHAETA                             |      |             |      | 4                          |
| COPEPODA<br>DIAPTONUS                      | ٥    | ~           | 8    |                            |
| EPISHURA LACUSTRIS                         | 0    | -           | 0    |                            |
| HARPACTICOIDA                              | 0    | Ø           | -    |                            |
| LIMNOCALANUS                               | 0    | m           | 0    |                            |
| ALL COPEPODA                               |      |             |      | 124                        |
| OSTRACOOA                                  | 0    | 0           | 9    | 7                          |
| ANDHIPDOA<br>GARRARUS                      | ю    | <b>1</b> 0  | Ξ    | 131                        |
| ALL AMPHIPODA                              |      |             |      | 131                        |
| DIPTERA<br>CHIRONOMIDAE                    | ŭ    | 20          | 7    | 386                        |

N

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |          | 5/ 4/84   |
|---------------------------------------|------------|-------------|----------|---|
| TRANSECT 13 STATION 3 (CONT'D)        |            |             | !        |   |
| TAXON                                 | - <b>6</b> | GRAB COUNTS | S E      | ESTIMATED<br>NO./SQ. METER                          |
| EPHEMEROPTERA<br>EDUCAMEDIDAE         |            |             | !<br>!   | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| HEXAGENIA                             | 98         | 73          | 80       |   |
|                                       |            |             |          | 000   |
|                                       |            |             |          | 000   |
| TRICHOPTERA                           |            |             |          |   |
| LEPTOCERIDAE                          | •          | •           | ,        |   |
|                                       | <b>.</b>   | -           | 77       |   |
| ALL TRICHOPTERA                       |            |             |          | 84  |
| GASTROPODA                            |            |             |          |   |
| AMNICOLA                              | -          | 0           | 4        |   |
| FIRST LIVESCENS                       | c          | -           | -        |   |
|                                       | •          | •           | •        |   |
| GYRAULUS                              | 0          | 0           | 4        |   |
| ALL GASTROPODA                        |            |             |          | 76  |
| PELECYPODA                            |            |             |          |   |
| SPHAERIIDAE                           |            |             |          |   |
| PISIDIUM                              | 4          | φ           | <b>6</b> |   |
| SPHAERIUM                             | -          | 0           | -        |   |
| ALL SPHAERIIDAE<br>ALL SPHAERIIDAE    |            |             |          | 207   |
|                                       |            |             |          | į   |

| DETROIT RIVER TRANSECT 14 STATION 1                       | ,        |             |          |   |
|---|----------|-------------|----------|---|
| TAXON   | GRA<br>- | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER              |
| PORIFERA  | 1        |             |          | 1 |
| SPONGILLA   | +        | +           | +        | +                                       |
| ALL PORIFERA  |          |             |          | 0                                       |
| NEMATODA  | 0        | -           | 0        | 1                                       |
| OLIGOCHAETA   |          |             |          |   |
| NAIS  | -        | 8           | ĸ        |   |
| SPIROSPERMA   | 0        | 9           | 0        |   |
| OTHER   | 24       | 10          | 80       |   |
| ALL OLIGOCHAETA   |          | }           | }        | 737                                     |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA                         | -        | 8           | -        | 28                                      |
| w   |          |             |          | 28                                      |
|   | -        | 4           | -        |   |
| DIAPTOMUS   | 27       | 77          | 20       |   |
| HARPACTICOIDA   | 0        | 0           | -        |   |
| LIMNOCALANUS  | 8        | 10          | 8        |   |
| ALL COPEPODA  |          |             |          | 640                                     |
| OSTRACODA   | 0        | ო           | -        | <b>38</b>                               |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 0 %      | 0 0         | ~ დ      | 69<br>76                                |
|   |          |             |          |   |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA    |      |             |          | 5/ 3/84       |
|--|------|-------------|----------|---------------|
| TRANSECT 14 STATION 1 (CONT'D)           | GRAB | GRAB COUNTS | NTS      | ESTIMATED     |
| TAXON                                    | -    | 8           | 8        | NO./SQ. METER |
| EPHEMEROPTERA<br>BAETISCIDAE<br>BAETISCA | -    | 0           | 0        |               |
| ALL EPHEMEROPTERA                        |      |             |          | 7             |
| ACARINA                                  | -    | 0           | 0        |               |
| GASTROPODA<br>AMNICOLA                   | 6    | 4           | <b>6</b> |               |
| ELIMIA LIVESCENS                         | 9    | 7           | 27       |               |
| ALL GASTROPODA                           |      |             |          | 613           |
| PELECYPODA                               |      |             |          |               |
| SPHAERIIDAE<br>PISIDIUM                  | ŧ,   | 4           | 21       |               |
| SPHAERIUM                                | က    | 4           | φ        |               |
| ALL SPHAFETIDAE                          |      |             |          | 420           |
| UNIONIDAE                                | -    | 0           | 0        | 427           |
| ALL PELECYPUDA                           |      |             |          |               |

| TRANSECT 14 STATION 2  GRAB COUNTS  1 2 3 3  0 0 11  0 0 11  0 0 6  0 2 3  3 5 6  0 0 6  1 1 1  1 1  1 1  1 1  1 1  1  | ALAU INDOS GRAD INCIDENTAL        | 4 1 4 1 W |          |       | 5/ 3/84 |
|--|-----------------------------------|-----------|----------|-------|---------|
| GRAB COUNTS  1 2 3 N  FERA  FERA  NRIA  A  O 0 11  O 0 11  O 0 6  O 2 3  A  O 0 6  CHAETA  O 0 1 1  O 0 0  O 0 0 | DETROIT RIVER TRANSECT 14         |           |          |       |         |
| HERA  RIA  O 0 11  O 0 11  RIA  O 0 6  O 2 3  A 0 1 1  CHAETA  O 0 6  IA SPECIOSA  28 18 24  AACTA  AACTA  21 11 19  |                                   |           | SRAB     | COUNT |         |
| FERA FERA NA   | PORIFERA<br>SPONGILLA             |           | _ ا      |       | !       |
| NRIA  O 0 11 7  O 0 6 4  O 2 3 3  A  A  O 0 6 6  RMA  O 1 1  CHAETA  IA SPECIOSA  28 18 24  837  4467  14 59 351   | ALL PORIFERA                      | •         |          | •     | •       |
| RMA  CHAETA  O 0 11  O 0 6  O 2 3  S 6 6  O 0 6  I 1  I SPECIOSA  I 1 19 385  AMETA  | CNIDARIA                          |           |          |       | ٥       |
| A A O O G BRMA O O G G BRMA O O G G G G G G G G G G G G G G G G G  |                                   | •         |          | •     | 1 76    |
| A A O O G B B B B B B B B B B B B B B B B B  | ALL CMIDARIA                      |           |          |       | 92      |
| A SPECIOSA 24 53   | TRICLADIDA                        | 0         |          |       |         |
| 3 5 6 RMA CHAETA 28 18 24 5: 1Abeta  | NEMERTINEA                        | •         |          | ~     |         |
| A RMA CHAETA 24 55  IA SPECIOSA 21 11 19 35  AMETA   | NEMATODA                          | . ca      | •        |       |         |
| CHAETA 24 11 19 14 19 14 19  | OLIGOCHAETA                       | •         | •        | -     |         |
| CHAETA 24 11 19 14 19 14 19  | MAIS                              | 0         | Ü        |       | 10      |
| CHAETA 24 18 24  CHAETA 28 18 24  LA SPECIOSA 21 11 19  AMETA  | SPIROSPERMA                       | C         |          | _     |         |
| CHAETA 24  LA SPECIOSA 21 11 19  LA SPECIOSA 24  | OTHER                             | ' (       |          |       |         |
| IA SPECIOSA 21 11 19   | ALL DLIGOCHAETA                   | <b>58</b> | <b>P</b> |       |         |
|  | POLYCHAETA<br>Manayunkia Speciosa | 21        | Ξ        |       |         |
|  | ;                                 |           |          |       |         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |       |      | 5/ 3/84   |
|---------------------------------------|-----|-------|------|---|
| TRANSECT 14 STATION 2 (CONT'D)        | Ş   | Č     | ,    |   |
|                                       |     | 1 2 3 | n 10 | NO./SQ. METER                                       |
| COPEDOA                               |     | •     |      | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
|                                       | •   | -     | •    |   |
| DIAPTOMUS                             | ဓ္ဓ | ŧ.    | 16   |   |
| HARPACTICGIDA                         | -   | 0     | 0    |   |
|                                       |     | 1     | ı    |   |
| LIMNOCALANUS                          | 7   | 7     | 4    |   |
| UNIDENTIFIED NAUPLII                  | c   | -     | c    |   |
|                                       | •   | •     | •    |   |
| ALL COPEPODA                          |     |       |      | 510   |
| OSTRACODA                             | 0   | 8     | -    | 21  |
|                                       |     |       |      |   |
| DIPTERA                               | •   | •     | ,    |   |
| CHIRONOMIDAE                          | - 1 | M RU  | - 1  | 131   |
| ALL DIPTERA                           | •   | •     |      | 158   |
| TRICHOPTERA                           |     |       |      |   |
| HYDROPSYCHIDAE                        |     |       |      |   |
| CHEUMATOPSYCHE                        | 4   | 0     | 5    |   |
| ********                              |     |       |      |   |
| HYDROPSYCHE                           | 0   | 0     | -    |   |
| ALL TRICHOPTERA                       |     |       |      | 138   |
| GASTROPOOA                            |     |       |      |   |
| AMNICOLA                              | 7   | 8     | 0    |   |
|                                       |     |       |      |   |
|                                       | 12  | Ξ     | 7    |   |
|                                       |     |       |      |   |
| ALL GASTRUPUDA                        |     |       |      | 288   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |          | 5/ 3/84                 |
|---------------------------------------|------------|-------------|----------|-------------------------|
| TRANSECT 14 STATION 2 (CONT'D)        |            |             |          |                         |
| TAXON                                 | <b>8</b> – | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER |
| PELECYPODA                            |            |             |          |                         |
| SPHAERIIDAE                           |            |             |          |                         |
| PISIDION                              | 11         | 18 16       | 9        |                         |
|                                       |            |             |          |                         |
| SPHAERIUM                             | 13         | 12          | =        |                         |
|                                       |            |             |          |                         |
| ALL SPHAERIIDAE                       |            |             |          | 599                     |
| UNIONIDAE                             | -          | 0           | 0        |                         |
| ALL DELECTORS                         | •          | •           | •        | 500                     |

| DETROIT RIVER                     |                       |      |             |           |                            |
|-----------------------------------|-----------------------|------|-------------|-----------|----------------------------|
| TAXON                             | TRANSECT 14 STATION 3 | GR.  | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| FISH<br>FISH EGGS                 |                       | -    | 0           | 0         | 7                          |
| ALL FISH                          |                       |      |             |           | -                          |
| CNIDARIA<br>Hydra                 |                       | 33   | 0           | •         | 282                        |
| ALL CHIDARIA                      |                       |      |             |           | 282                        |
| RHABDOCOELA                       |                       | 8    | -           | •         | 76                         |
| TRICLADIDA                        |                       | 8    | 0           | -         | 24                         |
| NEMERTINEA                        |                       | 88   | 177         | 42        | 1914                       |
| NEMATODA                          |                       | 90   | 37          | 27        | 647                        |
| OL 1GOCHAETA<br>BRANCHIURA        |                       | 8    | a           | 0         |                            |
| SPIROSPERMA                       |                       | 213  | 154         | 134       |                            |
| OTHER<br>ALL OLIGOCHAETA          |                       | 2 15 | 247         | 236       | 8285                       |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA | SPECIOSA              | 8    | 262         | 258       | 3946                       |
| ALL POLYCHAETA                    |                       |      |             |           | 3946<br>9                  |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA                              |            |                |     | 5/3/84        |
|--|------------|----------------|-----|---------------|
| TRANSECT 14 STATION 3 (CONT'D)                                     | ď          | CDAR COUNTS    | ATM | ESTIMATED     |
| TAXON  | <b>5</b> - | 8              |     | NO./SQ. METER |
| CLADOCERA  |            |                |     |               |
| ILYOCRYPTUS  | ~          | 0              | 0   | <b>*</b>      |
| AL CLADOCERA   |            |                |     | 14            |
| Achenda  |            |                |     |               |
| DIAPTOMUS  | <b>o</b>   | 0              | σ   |               |
| LIMMOCALANUS   | 0          | 80             | -   |               |
| MESOCYCLOPS  | 0          | 0              | -   |               |
| ALL COPEPODA   |            |                |     | 193           |
| OSTRACODA  | 1994       | 267            | 387 | 18236         |
| AMPHIPODA<br>Gammarus  | 7          | 0              | -   |               |
| HYALELLA AZTECA  | 7          | 0              | -   |               |
| ALL AMPHIPODA  |            |                |     | 124           |
| TERRESTRIAL INSECT   | -          | 0              | 0   | 1             |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA          | 0 4        | 4 <b>&amp;</b> | 0 2 | 1205<br>1219  |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA<br><br>ALL EPHEMEROPTERA | ø          | <b>.</b>       | €0  | 0             |

B-435

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |            | 5/ 3/84       |
|---------------------------------------|------|-------------|------------|---------------|
| TRANSECT 14 STATION 3 (CONT'D)        | GRAB | GRAB COUNTS | ZTS        | ESTIMATED     |
| TAXON                                 | -    | 2           | 6          | NO./SO. METER |
| TRICHOPTERA<br>HYDROPSYCHIDAE         | Ā    | c           | c          |               |
|                                       | ?    | •           | •          |               |
| LEPTOCERIDAE<br>GERACLEA              | 0    | -           | 0          |               |
| ALL TRICHDPTERA                       |      |             |            | 110           |
| ACARINA                               | o    | -           | 0          | 69            |
| GASTROPODA<br>AMNICOLA                | -    | ø           | •          |               |
|                                       | -    | c           | c          |               |
|                                       | -    | •           | >          |               |
| ELIMIA LIVESCENS                      | w    | 6           | 7          |               |
| PHYSA                                 | 8    | 0           | 0          |               |
| ALL GASTROPODA                        |      |             |            | 241           |
| PELECYPODA                            |      |             |            |               |
| SPHAERIDAE<br>Pisidium                | 34   | 52          | <b>3</b> 6 |               |
| SPHAERIUM                             | 34   | 36          | 23         |               |
| ALL SPHAERIDAE                        |      |             |            | 1412          |
| UNIONIDAE                             | 0    | -           | -          |               |
| TRUNCILLA                             | -    | 0           | 0          |               |
| 0.14E                                 | 0    | 9           | 0          | 1474          |
| ALL PELECTOUR                         |      |             |            |               |

**(** 

| MACROCOGENITOS PUNAR GRAB COUNI DAIA |            |             |           | 5/ 3/84                    |
|--------------------------------------|------------|-------------|-----------|----------------------------|
| DETROIT RIVER TRANSECT 15 STATION 1  |            |             |           |                            |
| TAXON                                | <b>8</b> - | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>ND./SQ. METER |
| CNIDARIA<br>HYDRA                    | -          | 6           | 6         | 06                         |
| ALL CNIDARIA                         |            |             |           | 06                         |
| TRICLADIDA                           | 0          | -           | 0         | •                          |
| NEMERTINEA                           | 6          | -           | n         | 4                          |
| NEMATODA                             | 6          | 33          | Ξ         | 324                        |
| OLIGOCHAETA<br>SPIROSPERMA           | =          | -           | 4         |                            |
| OTHER<br>ALL OLIGOCHAETA             | 4          | <b>6</b>    | 12        | 482                        |
| COPEPODA<br>CYCLOPS BICUSPIDATUS     | -          | <b>+</b>    | 4         |                            |
| DIAPTOMUS                            | 9          | -           | ō         |                            |
| LIMMOCALANUS                         | +          | 0           | 0         |                            |
| ALL COPEPODA                         |            |             |           | 193                        |
| OSTRACODA                            | •          | -           | 4         | 62                         |
| AMPHI PODA<br>Gammarus               | -          | -           | -         | . 47                       |
| ALL AMPHIPODA                        |            |             |           | •                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |           |             |          | 5/3/84                     |
|---|-----------|-------------|----------|----------------------------|
| TRANSECT 15 STATION 1 (CONT'D)                  | •         |             | }        |                            |
|   | GRAB<br>1 | GRAB COUNTS | S €      | ESTIMATED<br>NO./SQ. METER |
| DIPTERA<br>CHIRONOMIDAE                         | -         | 8           | 7        | 34                         |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | -         | -           | m        | 46                         |
| GASTROPODA                                      | -         | in.         | -        |                            |
| ELIMIA LIVESCENS                                | п         | on .        | <b>6</b> | 84                         |
| PELECYPODA<br>SPHAERIIDAE<br>PISIOIUM           | ō         | 80          | un.      |                            |
| UNIONIDAE<br>LAMPSILIS RADIATA SILIQUDIDEA      |           | 0           | ٥        |                            |
| AOD   |           |             |          | 165                        |

13-438

| EGGS<br>SH<br>IDARIA<br>IDA<br>IEA<br>IEA<br>GOCHAETA<br>GOCHAETA<br>S BICUSPIDATUS<br>ALANUS  | DETROIT RIVER TRANSECT                  | TRANSECT 15 STATION 2 |     |        |      |
|--|---|-----------------------|-----|--------|------|
| EGGS  NA  SH  A  SH  CDARIA  DARIA  D | NO                                      |                       | RAB | COUNTS |      |
| EGGS  SH  A  SH  A  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  A   |   | !                     |     |        |      |
| SH   | FISH EGGS                               |                       |     |        |      |
| SH  DARIA  ELA  O 3 0  DA  DA  ETA  ETA  B 5 3  COCHAETA  S BICUSPIDATUS  S BICUSPIDATUS  O 0 4  ALANUS  O 2 0   |   | •                     |     | -      | 7    |
| DARIA   15   15   15   15   15   15   15   1   | ALL FISH                                |                       |     |        | r    |
| 292 101 15  DA  DELA  O 3 0  IDA  IEA  ETA  B 5 3  AB 14 50  IETA  GOCHAETA  1 6 3  GOCHAETA  S BICUSPIDATUS  B 0 1  MUS  I 1 9  OPS  O 2 0  | CNIDARIA                                |                       |     |        | •    |
| DA   | HYDRA                                   | C                     |     |        |      |
| DARIA  | , | 767                   |     |        | 2810 |
| DA   | ALL CNIDARIA                            |                       |     |        | 2810 |
| 20 12 0 8 5 3 49 14 50 HAETA ICUSPIDATUS  0 0 4 WUS  | RHABDOCDELA                             | 0                     | m   |        | Č    |
| EA 8 5 3  ETA 1 6 3  GDCHAETA 249 14 50  S BICUSPIDATUS 8 0 1  MUS 1 9  ALANUS 0 2 0   | TRICLADIDA                              | , 66                  | , ; |        | - (  |
| FETA PERMA SERCUSPIDATUS SEICUSPIDATUS SEICU | NEMERTINEA                              | •                     | •   |        | 750  |
| FETA PERMA  1 6 3  GOCHAETA  24 22 38  GOCHAETA  8 0 1  MUS  1 1 8  OPS  ALANUS  0 2 0   |   | 10                    | io. | n      | 5    |
| FERMA PERMA 1 6 3 GOCHAETA 24 22 38 GOCHAETA  S BICUSPIDATUS NUS 1 1 9 DPS 0 0 4 ALANUS 0 2 0  | NEMATODA                                | 49                    | 14  |        | 778  |
| GOCHAETA 24 22 38 GOCHAETA 22 38 GOCHAETA 22 38 S BICUSPIDATUS 8 0 1 MUS 1 1 9 OPS 0 0 4 ALANUS 0 2 0  | OL I GOCHAETA                           |                       |     |        |      |
| GOCHAETA 24 22 38  S BICUSPIDATUS 8 0 1  MUS 1 1 9  OPS 0 0 4  ALANUS 0 2 0  | STRUSTERIA                              | -                     | 9   | 0      |      |
| S BICUSPIDATUS  S BICUSPIDATUS  MUS  1 1 9  0 5  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9  1 1 9   | OTHER                                   | 24                    | 22  | 86     |      |
| S BICUSPIDATUS 8 0 MUS 1 1 1 DPS 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | ALL ULIGOCHAETA                         |                       | !   | }      | 647  |
| USPIDATUS 8 0  | COPEPODA                                |                       |     |        |      |
| - 0 0 - 5 - 0 0 - 5 - 0 0 - 5 - 0 0 - 5 - 0 0 0 - 5 - 0 0 0 0  | CICLOPS BICUSPIDATUS                    | 60                    | 0   | -      |      |
| 0 0  | DIAPTONUS                               | -                     | -   | σ      |      |
| 0 0 0  |   |                       | •   | •      | •    |
| S 0 2  |   | 0                     | 0   | 4      |      |
|  | LIMNOCALANUS                            | •                     | ~   | o      |      |
|  | ALL COREDOR                             |                       |     | )      |      |

| TRANSECT 15 STATION 2 (CONT'D)  TRANSECT 15 STATION 2 (CONT'D)  TAXON  TAXON  GRAB COUNTS  TAXON  GRAB COUNTS  1 2 3 NO. 150. METE  1 2 3 NO. 150. METE  2 2 0 28  AMMARINO  GAMMARINO  GAM | MACKUCUUBENITUS PUNAK GRAB CUUNI UAIA   |          |    |          | \r<br>\r<br>\r | 3/04  |
|--|---|----------|----|----------|----------------|-------|
| 1  | 15 STATION 2                            | GRA      | 00 | STMU     | FSTIMAT        | 9     |
| 16 39   1   15   2   2   0   1   15   1   15   1   15   1   15   1   1   | TAXON                                   | -        | 8  | 6        | NO./59.        | METER |
| MIDAE  OPTERA RIDAE  ENIL  CIDAE  SCA  SYCHIDAE  ATOPSYCHE  RIDAE  TERA  SYCHIDAE  ATOPSYCHE  ERIDAE  TOHOPTERA  TOHOPTER | OSTRACODA                               | 91       | 38 | -        | 386            |       |
| RUS PHIPODA  ONIDAE  ONIDAE  ENIA  CIDAE  ENIA  CIDAE  SCA  HEWERDPTERA  TERA  SYCHIDAE  ATOPSYCHE  ERIDAE  ERIDAE  CON  CON  CON  CON  CON  CON  CON  CO  | AMPHIPODA                               |          |    |          |                |       |
| PHIPODA  OWIDAE  RIDAE  ENIA  CIDAE  SCA  CIDAE  CIDA | GAMMARUS                                | 8        | N  | 0        | <b>58</b>      |       |
| OPTERA RIDAE RIDAE RIDAE SCA CIDAE SCA ENIIDAE NEMA TERA SYCHIDAE ATOPSYCHE LEA TCHOPTERA TCHOPTERA TLIVESCENS TOPTERA TOPTERA TLIVESCENS TOPTERA TOPT | ALL AMPHIPODA                           |          |    |          | 28             |       |
| E  | DIPTERA                                 | !        | •  | •        |                |       |
| E 10 11 0 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | CHIRONOMIDAE                            | 5        | 7  | 1        | 145            |       |
| E 10 11 0 DAE 2 0 0 ROPTERA 2 0 0 SYCHE 175 68 5 HE 69 9 0 HT 0 0 PTERA 1 0 0  | EPHEMEROPTERA                           |          |    |          |                |       |
| E 10 11 0 1 10 10 10 10 10 10 10 10 10 10  | EPHEMERIDAE<br>HEXAGENIA                | c        | -  | c        |                |       |
| DAE  10 11 0  BOAE  ROPTERA  SYCHE  SYCHE  SYCHE  AE  A  1 0 0  PTERA  1 0 0  1 0 0  |   | •        | •  | •        |                |       |
| DAE  ROPTERA  ROPTERA  SYCHE  SYCHE  SYCHE  SYCHE  175 68 5  69 9 0  PTERA  1 0 0  1 0 0  PTERA  1 0 0   | BAETISCIDAE                             |          |    |          |                |       |
| DAE ROPTERA ROPTERA 100AE 175 68 5   | BAETISCA                                | 9        | Ξ  | 0        |                |       |
| 2 0 0  ROPTERA  SYCHE  175 68 5  HE  AE  2 0 0  PTERA  1 0 0  1 0 0  PTERA  1 9 4 8 4  | HEDTAGENITORE                           |          |    |          |                |       |
| FOPTERA  FIDAE  SYCHE  SYCHE  FIDAE  SYCHE  175 68 5  69 9 0  176 69 9 0  177 68 5  178 68 5  17 | STENDNEWA                               | 8        | 0  | 0        |                |       |
| SYCHE 175 68 5  SYCHE 175 68 5  HE 69 9 0  HE 2 0 0  PTERA 1 0 0  VESCENS 107 31 9   |   |          |    |          | !              |       |
| SYCHE 175 68 5  HE 69 9 0  HE 2 0 0  PTERA 1 0 0  VESCENS 107 31 9   | ALL EPHEMEROPTERA                       |          |    |          | 165            |       |
| SYCHIDAE.  ATOPSYCHE  FSYCHE  FSYCHE  FRIDAE  LEA  ICHOPTERA  ICHO | TRICHOPTERA                             |          |    |          |                |       |
| ATOPSYCHE 175 68 5  PSYCHE 69 9 0  ERIDAE 2 0 0  LEA 1 0 0 0  ODA 4 8 4  A LIVESCENS 107 31 9  STROPODA 5  | HYDROPSYCHIDAE                          |          |    |          |                |       |
| ERIDAE LEA LEA LEA LCHOPTERA ICHOPTERA ICHOPTE | CHEUMATOPSYCHE                          | 175      | 89 | ED.      |                |       |
| LEA 2 0 0 0 1 CHOPTERA 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | HYDROPSYCHE                             | 69       | 0  | 0        |                |       |
| ERIDAE  LEA  LEA  ICHOPTERA  1 0 0  DDA  OLA  A LIVESCENS  STROPODA  STROPODA  | 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |          |    |          |                |       |
| CHOPTERA 2 0 0  CHOPTERA 1 0 0  DDA 0LA 4 8 4  LIVESCENS 107 31 9  STROPODA 5  | LEPTOCERIDAE                            | •        | •  | ,        |                |       |
| 1CHOPTERA 1 CHOPTERA 1 | CERACLEA                                | 64       | 0  | 0        |                |       |
| 10-NUTERA<br>0DA<br>0LA<br>11 VESCENS<br>107 31 9<br>5TROPODA  |   |          |    |          |                |       |
| 0DA<br>0LA<br><br><br>   | ALL INICHOPIERA                         |          |    |          | 8077           |       |
| 1VESCENS 107 31 9  | ACARINA                                 | -        | 0  | 0        | ~              |       |
| ICOLA  | GASTROPODA                              |          |    |          |                |       |
| MIA LIVESCENS 107 31 9 GASTROPODA  | AMNICOLA                                | <b>→</b> | ∞  | <b>→</b> |                |       |
| GASTROPODA   | ELIMIA LIVESCENS                        | 101      | 3  | 60       |                |       |
|  | GAST                                    |          |    |          | 1123           |       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |             |          | 5/ 3/84                                 |
|---------------------------------------|----------|-------------|----------|---|
| TRANSECT 15 STATION 2 (CONT'D) TAXON  | GRA!     | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER              |
| PELECYPODA                            |          | !           | !        | 1 |
| SPHAERIDAE<br>PISIDIUM                | <b>Q</b> | 22          | 20       |   |
| WILDSAMO                              | 0        | 7           | 0        |   |
|                                       | •        |             |          | 393                                     |
| ALL STREELIONE ALL PELECYPODA         |          |             |          | 383                                     |

| MACROZDOBENTHOS POR               | MACROZDOBENTHOS PONAR GRAB COUNT DATA |      |             |     | 5/ 3/84            |
|-----------------------------------|---------------------------------------|------|-------------|-----|--------------------|
| DETROIT RIVER                     | TRANSECT (5 STATION 3                 | GRAE | GRAB COUNTS | NTS | ESTIMATED NO ASTED |
| FISH<br>FISH EGGS                 |                                       | •    | -           | 0   |                    |
| ALL FISH                          |                                       |      |             |     |                    |
| CNIDARIA<br>HYDRA                 |                                       | -    | 0           | -   | <b>7</b>           |
| ALL CNIDARIA                      |                                       |      |             |     | 2                  |
| Nemert inea                       |                                       | -    | 8           | 0   | 21                 |
| NEMATODA                          |                                       | 7    | 0           | 9   | 207                |
| OL I GOCHAETA<br>Spirosperma      |                                       | -    | •           | 0   |                    |
| OTHER<br>ALL OLIGOCHAETA          |                                       | -    | 22          | 0   | 220                |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA | YSC Y                                 | N    | a           | ٥   | 28                 |
| ALL POLYCHAETA                    |                                       |      |             |     | <b>38</b>          |
| CLADOCERA<br>DAPHNIA              |                                       | •    | 0           | -   | ٢                  |
| ALL CLADOCERA                     |                                       |      |             |     | 7                  |
|                                   | ITUS                                  | -    | ~           | 0   |                    |
| DIAPTOMUS                         | 1                                     | -    | 8           | 16  |                    |
| LIMNOCALANUS                      |                                       | 0    | m           | m   |                    |
| ALL COPEPODA                      |                                       |      |             |     | 193                |

j

| MACROZOGBENTHOS PONAR GRAB COUNT DATA            |       |     |     | 5/3/84        |
|--|-------|-----|-----|---------------|
| TRANSECT 15 STATION 3 (CONT'D)                   | 9400  | Š   | 2   | 0314411       |
| TAXON  | 1 2 3 | 5 7 | n m | NO./SQ. METER |
| OSTRACODA  | 0     | 9   | -   | 84            |
| DIPTERA<br>CHIRONOMIDAE                          | 0     | 4   | ო   | <b>4</b>      |
| EPHEMEROPTERA<br>Ephemeridae                     | •     | •   |     |               |
| TEXAGENIA  | m     | 7   | -   |               |
| BAETISCIDAE<br>Baetisca                          | -     | 0   | 0   |               |
| ALL EPHEMEROPTERA                                |       |     |     | 8             |
| TRICHOPTERA<br>Hydropsychidae<br>Hydropsyche     | 0     | 0   | -   |               |
| LEPTOCERIDAE<br>OECETIS                          | 0     | 0   | -   |               |
| ALL TRICHOPTERA                                  |       |     |     | 7             |
| GASTROPODA<br>ELIMIA LIVESCENS<br>ALL GASTROPODA | 0     | -   | •   |               |
| PELECYPODA<br>Sphaeridae<br>Pisidium             | -     | •   | 5   |               |
| SPHAERIUM  | 0     | 0   | 4   |               |
| ALL SPHAERIIDAE ALL PELECYPODA                   |       |     |     | 172<br>172    |
|  |       |     |     |               |

| MACKUZUUBENIHUS PUNAK GRAB CUUN! UA'A         |            |              |        | 5/ 3/84       |
|---|------------|--------------|--------|---------------|
| DETROIT RIVER TRANSECT 16 STATION 1           | Ö          | STIMIOS GAGS | . TAIT | 497           |
|   | <b>5</b> – | 2<br>2<br>3  | n e    | NO./SQ. METER |
| CNIDARIA<br>HYDRA                             | 32         | 80           | 11     | 393           |
| ALL CNIDARIA                                  |            |              |        | 393           |
| RHABDOCOELA                                   | 60         | ស            | 8      | 103           |
| NEMATODA                                      | 260        | 5            | 218    | 3987          |
| HIRUDINEA<br>ERPOBDELLIDAE<br>GIOSTIDAINITIAE | -          | 0            | ю      |               |
| GLOSSIPHONIA HETEROCLITA                      | 0          | 8            | 0      |               |
| ŧ   | 0          | 0            | ß      |               |
| HELOBDELLA STAGNALIS                          | 0          | 0            | -      |               |
| ALL HIRUDINEA                                 |            |              |        | 683           |
| OLIGOCHAETA<br>Nais                           | 24         | 0            | €      |               |
| SPIROSPERMA                                   | 8          | 7            | 0      |               |
| OTHER<br>ALL OLIGOCHAETA                      | 1206       | <b>4</b> 70  | 1242   | 19964         |
| POLYCHAETA - POLYCHAETA - PANAYUNKIA SPECIOSA | 0          | 0            | 5      | 110           |
| ALL POLYCHAETA                                |            |              |        | 10            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |         |             |      | 5/3/84          |
|---|---------|-------------|------|-----------------|
| TRANSECT 16 STATION 1 (CONT'D)                            | GR.     | GRAB COUNTS | UNTS | ESTIMATED       |
| TAXON   | -       | 7           | e    | NO./SQ. METER   |
| A<br>PS BICUSPID  | -       | 0           | 0    |                 |
| DIAPTOMUS   | 16      | ō           | 0    |                 |
| HARPACTICOIDA   | 10      | 42          | 195  |                 |
| PARACYCLOPS   | •       | 0           | 9    |                 |
| ALL COPEPODA  |         |             |      | 2279            |
| OSTRACODA   | 447     | 9           | 421  | 6391            |
| AMPHIPODA<br>GAMMARUS                                     | 5       | 5           | •    |                 |
| HYALELLA AZTECA   | 263     | 105         | 78   |                 |
| ALL AMPHIPODA   |         |             |      | 3282            |
| ISOPODA<br>ASELLUS  | -       | -           | 8    | 79<br>78        |
| ALL ISOPODA   |         |             |      | 28              |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 27 + 48 | 500         | 55   | 14131.<br>14352 |
| CAENIDAE<br>CAENIDAE<br>CAENIS                            | -       | 0           | 4    |                 |
| ALL EPHEMEROPTERA   |         |             |      | 46              |
| LEPIDOPTERA   | m       | -           | -    | 34              |

11-445

| TRANSECT 16 STATION 1 (CONT'D)  TAXON TRICHOPTERA HYDROPSYCHIBAE CHEUMATOPSYCHE HYDROPSYCHE | GRAB COUNTS | Ş   |      |               |
|---|-------------|-----|------|---------------|
| IDAE<br>SYCHE   | BYX5.       |     |      |               |
| IDAE<br>SYCHE   | - !         | 3 % | ) M  | NO./SQ. METER |
| CHEUMATOPSYCHE  |             |     | <br> |               |
| HYDEODESYCHE  | ~           | 6   | 0    |               |
| HADBODSACHE   |             |     |      |               |
|   | -           | 0   | 0    |               |
| 1025101   |             |     |      |               |
| LEPTOCERIDAE  |             |     |      |               |
| OECETIS   | 0           | -   | -    |               |
| ****  |             |     |      |               |
| TRIAENODES  | -           | 0   | 0    |               |
| ******  |             |     |      |               |
| ALL TRICHOPTERA   |             |     |      | 62            |
| ACARINA   | -           | -   | 0    | 7             |
| GASTROPODA  |             |     |      |               |
| AMNICOLA  | Ξ           | ~   | œ    |               |
|   | -           | 6   | . 0  |               |
|   |             | )   | )    |               |
| PHYSA   | 4           | -   | -    |               |
| * 1   |             |     |      |               |
| ALL GASTROPODA  |             |     |      | 213           |
| PELECYPODA  |             |     |      |               |
| SPHAERLIDAE   | -           | -   | 0    | 7             |
|   |             |     |      |               |
| ALL PELECYPODA  |             |     |      | 7             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |            |             | 5/ 3/84                 |
|---------------------------------------|-----|------------|-------------|-------------------------|
| DETROIT RIVER TRANSECT 16 STATION 2   | GRA | 80<br>82 % | GRAB COUNTS | ESTIMATED NO./SO. METER |
|                                       |     |            |             |                         |
| I                                     | -   | -          | 0           | 7                       |
| ALL FISH                              |     |            |             | 7                       |
| CNIDARIA<br>HYDRA                     | 0   | JÚ)        | 5           | 117                     |
| ALL CNIDARIA                          |     |            |             | 117                     |
| RHABDOCOELA                           | 7   | 0          | 7           | 158                     |
| TRICLADIDA                            | 0   | 0          | ~           | 7                       |
| NEMERTINEA                            | •   | 0          | 7           | 152                     |
| NEMATODA                              | 171 | 119        | 264         | 4228                    |
| HIRUDINEA<br>ERPOBDELLIDAE            | -   | 0          | -           |                         |
| IDAE<br>ELONG                         | 0   | -          | ٥           |                         |
| ALL HIRUDINEA                         |     |            |             | 21                      |
| OL IGOCHAETA<br>SPIROSPERMA           | õ   | ~          | =           |                         |
| OTHER<br>ALL OLIGOCHAETA              | 129 | 4          | 80          | . 5658                  |
|                                       |     |            |             |                         |

(

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |                |                |          | 5/ 3/84       |
|---|----------------|----------------|----------|---------------|
| TRANSECT 16 STATION 2 (CONT'D)                            | 9              | GDAR COMINTS   | MIS      | FSTIMATED     |
| 3   | -              |                | 6        | NO./SQ. METER |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA                         | -              | -              | ٥        | 14            |
| ALL POLYCHAETA  |                |                |          | 4.            |
| COPEPODA<br>CYCLOPS BICUSPIDATUS                          | 40             | 11             | <b>O</b> |               |
| DIAPTOMUS   | 47             | ð              | ٥        |               |
| HARPACTICOIDA   | <b>5</b>       | 83             | 0        |               |
| MESOCYCLOPS   | €              | 9              | •        |               |
| ALL COPEPODA  |                |                |          | 1350          |
| OSTRACODA   | 88             | 8              | 131      | 1749          |
| AMPHI PODA<br>GAMMARUS                                    | <b>s</b> O     | М              | •        |               |
| HYALELLA AZTECA<br>                                       | Ø              | -              | •        | 179           |
| TERRESTRIAL INSECT  | 0              | -              | 0        |               |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 20<br>83<br>83 | % <del>4</del> | 27       | 1185          |

| TATION 2 (CONT'D)  GRAB COUNT  1 2  19 2  10 0  AE  CHE  A  CHE  A  TERA  1 0  1 0  1 0  1 0  1 0  1 1  1 1  1   | PTERA  |                | 89<br>** | COUNTS<br>2 3                           | ESTIMATED<br>NO./SQ. METER |
|--|--|----------------|----------|---|----------------------------|
| ### 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  | EMEROPTERA<br>ENIDAE<br>ENIDAE<br>AENIS<br>HEMERIDAE<br>EXAGENIA<br>L EPHEMEROPTERA<br>IDOPTERA<br>CHOPTERA<br>HEUMATOPSYCHE | - <del> </del> |          | 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 |                            |
| 19 2 19 2 10 11 20 10 0 | EMEROPTERA AENIS AENIS HEMERIDAE EXAGENIA L. EPHEMEROPTERA CHOPTERA HEUMATOPSYCHE  | 19             |          |   |                            |
| E 20 11 2<br>ROPTERA 0 0 0 1 2 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 1 0 1 1 1 1 1 0 1   | AENIDAE LENIDAE EXAGENIA LEPHEMEROPTERA IDOPTERA CHOPTERA HEMATOPSYCHE   | 18             |          | !<br>!<br>!<br>!                        |                            |
| E 20 11 2<br>ROPTERA 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | HEMERIDAE EXAGENIA L EPHEMEROPTERA IDOPTERA CHOPTERA HEUMATOPSYCHIDAE  | 20             |          | 4                                       |                            |
| 20 11 2<br>IDAE SYCHE 1 0 0 0 HE   | EXAGENIA<br>L EPHEMEROPTERA<br>IDOPTERA<br>CHOPTERA<br>DROPSYCHIDAE  | 20             |          |   |                            |
| ROPTERA  ROPTERA  O O  IDAE  HE  HIA  HE  HO  HO  HE  HO  HO  HO  HO  HO  HO   | L EPHEMEROPTERA IDOPTERA CHOPTERA DROPSYCHIDAE   |                | _        |   |                            |
| IDAE SYCHE SYCHE HE HE HA HE HIA HE HODIDAE ROPUS ROPUS 1 2  | IDOPTERA<br>CHOPTERA<br>DROPSYCHIDAE<br>HEUMATOPSYCHE  |                |          |   | 578                        |
| SYCHE  SYCHE  HE  HE  HIA  HIA  PODIDAE  ROPUS  1 0  1 0  1 1  1 2   | CHOPTERA<br>DROPSYCHIDAE<br>HEUMATOPSYCHE  | 0              | _        |   | 4                          |
| CHE  | HEUMATOPSYCHE  |                |          |   |                            |
| CHE  IDAE  CHIA  TROPUS  | 1111111111111  | •              |          | -                                       |                            |
| TROPUS  1 0  1 0  1 0  1 0  1 0  1 0  1 0  1   | YDROPSYCHE   | -              |          |   |                            |
| DAE<br>DAE<br>CHE<br>GPOOIDAE<br>TROPUS<br>TROPUS<br>TROPUS<br>TROPUS<br>TROPUS<br>TROPUS<br>TROPUS<br>TROPUS  | DROPTILIDAE  | •              |          |   |                            |
| DAE<br>CHE<br>CHE<br>OPOOIDAE<br>3 3<br>7ROPUS<br>0PTERA   |  | -              |          |   |                            |
| OPTERA   | PTOCERIDAE   | •              |          |   |                            |
| OPCOIDAE 3 3 OPTERA 1 2  | IEC I UPSTCHE  | -              |          |   |                            |
| TROPUS<br>COPTERA  | LYCENTROPODIDAE  |                |          |   |                            |
| OPTERA 1 2   | HYLOCENTROPUS  | יי             |          |   | _                          |
| 7  | L TRICHOPTERA  |                |          |   | 98                         |
| :  | RINA   | •              |          |   | 21.                        |
|  | TROPODA  |                |          |   |                            |
|  | AMNICOLA   | <b>9</b>       |          | -                                       | -                          |
| GYRAULUS 1 0 0   | YRAULUS  | -              |          |   |                            |
|  | [  |                |          |   |                            |
| PHYSA . A STATE OF THE O   | HYSA   |                |          | -                                       |                            |
| PLEUROCERA ACUTA 5 5 2   | LEUROCERA ACUTA  | <b>80</b>      |          |   | ~                          |
|  |  |                |          |   |                            |

| MACROZDOBENTHOS PONAR GRAB COUNT DATA          | BRAB COUNT | DATA |            |                |    | 5/ 3/84                    |  |
|--|------------|------|------------|----------------|----|----------------------------|--|
| <b>ā</b>                                       | (CONT'D)   |      | GRAB       | GRAB COUNTS    | 3  | ESTIMATED<br>NO./SQ. METER |  |
|  |            |      |            |                |    |                            |  |
| PISIDION                                       |            |      | <b>3</b> 6 | <del>1</del> 3 | 47 |                            |  |
| SPHAERIUM                                      |            |      | 7          | ø              | 6  |                            |  |
| ALL SPHAERIIDAE<br>UNIONIDAE<br>ALL PELECYPODA |            |      | 0          | -              | -  | . 8 66<br>68 68<br>68 68   |  |

5/ 3/84

3: 450

|                                     |     |             |          | 6                          |
|-------------------------------------|-----|-------------|----------|----------------------------|
| DETROIT RIVER TRANSECT 16 STATION 3 |     |             | !        |                            |
| TAXON                               | ž – | GRAB COUNTS | S E      | ESTIMATED<br>NO./SQ. METER |
|                                     | -   | 7           | -        | 28                         |
| ALL FISH                            |     |             |          | 28                         |
| CNIDARIA<br>Hydra                   | 23  | 0           | 4        | 186                        |
| ALL CNIDARIA                        |     |             |          | 186                        |
| RHABDOCCELA                         | 1   | 0           | <b>+</b> | <b>S</b>                   |
| TRICLADIDA                          | -   | 0           | -        | 7                          |
| NEMATODA                            | 3   | 20          | 43       | 647                        |
| OLIGOCHAETA<br>Spirosperma          | 8   | ო           | 0        |                            |
| OTHER<br>ALL OLIGOCHAETA            | 178 | 231         | 40       | 3567                       |
| POLYCHAETA<br>Manayuwakia speciosa  | 9   | 5           | ٥        | 178                        |
| ALL POLYCHAETA                      |     |             |          | 179                        |
| CLADOCERA<br>DAPHNIA                | 0   | •           | -        | <b>6</b> 2                 |
| ALL CLADGCERA                       |     |             |          | 62                         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |      | 5/ 3/84  |
|---------------------------------------|------------|-------------|------|--|
| TRANSECT 16 STATION 3 (CONT'D)        |            |             |      |  |
| TAXON                                 | - 68       | GRAB COUNTS | N 60 | ESTIMATED NO./SQ. METER  |
| COPEPODA DIAPTOMUS                    | <b>6</b> 0 |             | . 6  | :<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>: |
| LIBNOCALANUS                          | 0          | 0           | -    |  |
| MACROCYCLOPS                          | 0          | -           | 0    |  |
| ALL COPEPODA                          |            |             |      | 145  |
| OSTRACODA                             | 34         | <b>36</b>   | 57   | 806  |
| AMPHI PODA<br>GAMMARUS                | 96         | 5           | •    |  |
|                                       | ø          | -           | ~    |  |
| ALL AMPHIPODA                         |            |             |      | 455  |
| TERRESTRIAL INSECT                    | 0          | 0           | -    | 7  |
| DIPTERA<br>Ceratopogonidae            | •          | ~           | ٥    |  |
| CHIRONOMIDAE                          | 46         | <u>.</u>    | តិ ( | 171  |
| ALL DIPTERA                           | -          | >           | •    | 799  |
| EPHEMEROPTERA<br>FDWFMFDIDAF          |            |             |      |  |
| HEXAGENIA                             | •          | n           | -    |  |
| EPHEMERELLIDAE<br>ESHEMEDELIA         | •          | c           | c    |  |
|                                       |            | •           | •    |  |
| BAETISCIDAE<br>BAETISCA               | -          | -           | 0    |  |
| ALL EPHEMEROPTERA                     |            |             |      | 103  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |     | 5/ 3/84       |
|---------------------------------------|------------|-------------|-----|---------------|
| TRANSECT 16 STATION 3 (CONT'D)        | GRAB       | GRAB COUNTS | 118 | ESTIMATED     |
| NOX                                   | -          | 2           | m   | NO./SQ. METER |
| TRICHOPTERA                           |            |             |     |               |
| CHEUMATOPSYCHE                        | <b>I</b> O | 0           | 0   |               |
| HYDROPSYCHE                           | -          | 0           | 0   |               |
|                                       |            |             |     |               |
| HYDROPILLIDAE<br>HYDROPILA            | 0          | 0           | -   |               |
| ALL TRICHOPTERA                       |            |             |     | 4             |
| ACARINA                               | *          | 8           | •   | 98            |
| GASTROPODA                            |            | •           | ·   |               |
| AMNICOLA                              | Þ          | >           | •   |               |
| GYRAULUS                              | -          | 0           | 8   |               |
| DI ELIDOCEDA ACUTA                    | -          | 0           | 0   |               |
|                                       |            |             |     | G<br>G        |
| ALL GASTROPODA                        |            |             |     | 2             |
| PELECYPODA                            |            |             |     |               |
| SPHAERIIDAE<br>PISIOIUM               | 5          | 11          | ĸ   | 220           |
|                                       |            |             |     |               |
|                                       | -          | 0           | 0   | •             |
| LAMPSILIS VENTRICOSA                  | -          | 0           | 0   |               |
| PTYCHOBRAUCHUS FASCIOLARIA            | 0          | -           | 0   |               |
|                                       |            |             |     | 241           |
| ALL PELECTPUDA                        |            |             |     |               |

|   |     |       |             | 5/ 2/84                 |
|---|-----|-------|-------------|-------------------------|
| DETROIT RIVER TRANSECT 17 STATION             | -   |       |             |                         |
| TAXON   | ত ⊷ | 2AB C | GRAB COUNTS | ESTIMATED NO./SQ. METER |
| CNIDARIA<br>HYDRA                             | 22  | 23    | 474         |                         |
| ALL CNIDARIA                                  |     |       | <b>)</b>    | 1536                    |
| RHABDOCDELA                                   | so. | 7     | 8           | 96                      |
| TRICLADIDA                                    | 0   | -     | 0           | _                       |
| NEMERTINEA                                    | 4   | 0     | -           | 34                      |
| NEMATODA                                      | 96  | 194   | 212         | 3457                    |
| HIRUDINEA<br>ERPOBDELLIDAE<br>GLDSSIPHONIJDAE | n   | 8     | 8           |                         |
| GLOSSIPHONIA HETEROCLITA                      | -   | 0     | 0           |                         |
| ALL HIRUDINEA                                 |     |       |             | 10<br>10                |
| OLIGOCHAETA<br>Nais                           | 0   | 0     | 8           |                         |
| SPIROSPERMA                                   | 22  | 9     | ^           |                         |
| OTHER<br>ALL OLIGOCHAETA                      | 686 | 836   | 683         | 15508                   |
| POLYCHAETA<br>Manayunkia Speciosa             | -   | 0     | 0           | 7                       |
| ALL POLYCHAETA                                |     |       |             |                         |

B-454

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |      |             |           | 5/ 2/84                                 |
|---|------|-------------|-----------|---|
| TRANSECT 17 STATION 1 (CONT'D)                            |      | ļ           |           |   |
|   | - GR | GRAB COUNTS | UNTS<br>3 | ESTIMATED NO./SQ. METER                 |
| 8   | 0    | •           | 0         | 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| DIAPTOMUS   | -    | €           | ø         |   |
| HARPACTICOIDA   | 6    | 9           | 19        |   |
| LIMNOCALANUS  | -    | ~           | 0         |   |
| MACROCYCLOPS  | -    | 0           | 0         |   |
| ALL COPEPODA  |      |             |           | 943                                     |
| OSTRACODA   | -    | ო           | 0         | 28                                      |
| AMPHI PODA<br>GAMMARUS                                    | 4    | 4           | m         |   |
| HYALELLA AZTECA   | •    | ~ ~         |           |   |
| ALL AMPHIPODA   |      |             |           | 110                                     |
| ISOPODA<br>ASELLUS  | 8    | 0           | 0         |   |
| LIRCEUS   | -    | 0           | 0         |   |
| ALL ISOPODA   |      |             |           | 2                                       |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONDMIDAE<br>ALL DIPTERA | 9 0  | 49          | 4 86      | 1012                                    |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGNIA                  | -    | m           | •         |   |
| ALL EPHEMEROPTERA   |      |             |           | <b>58</b>                               |

5/ 2/84

| COMPANIENT |   |             |          |                                       |
|---|---|-------------|----------|---------------------------------------|
|   |   | GRAB COUNTS | NTS<br>B | ESTIMATED<br>NO./SQ. METER            |
| TRICHOPTERA   | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; | !           | -        | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| HYDROP SYCHIDAE<br>Cheimatodsyche   | •   | •           | (        |                                       |
|   | >   | -           | 0        |                                       |
| HYDROP SYCHE  | •   | -           | 0        |                                       |
| ALL TRICHOPTERA   |   |             |          | <u> </u>                              |
| GASTROPODA  |   |             |          |                                       |
| AMICOLA   | 22  | •           | 33       |                                       |
| ELIMIA LIVESCENS  | •   | ٥           | 6        |                                       |
| GYRAULUS  | •   | c           | 4        |                                       |
|   | •   | •           | •        |                                       |
| PHYSA   | -   | 0           | 0        |                                       |
| PLEUROCERA ACUTA  | -   | 0           | c        |                                       |
|   | •   | •           | )        |                                       |
| ALL GASTROPODA  |   |             |          | 510                                   |
| PELECYPODA  |   |             |          |                                       |
| SPHAERIIDAE<br>Pisidium   |   | -           | 9        |                                       |
|   | ?   |             | 3        |                                       |
| SPHAERIUM   | -   | 0           | •        |                                       |
| ALL SPHAERIIDAE   |   |             |          | 4 4                                   |
| ALL PELECIPODA  |   |             |          | 844                                   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |     | 5/ 2/84       |
|---------------------------------------|-----|-------------|-----|---------------|
| DETROIT RIVER TRANSECT 17 STATION 2   | 9   | SPAR COUNTS | Y   | ESTIMATED     |
| TAXON                                 | -   | 8           |     | NO./SQ. METER |
| ٧                                     | 22  | 238         | 18  | 2348          |
| ALL CNIDARIA                          |     |             |     | 2348          |
| RHABDOCOELA                           | -   | 0           | œ   | 62            |
| TRICLADIDA                            | 0   | -           | 0   | 7             |
| NEMERTINEA                            | ~   | n           | œ   | 06            |
| NEMATODA                              | 9   | 218         | 125 | 2982          |
| w a                                   | ო   | 4           | 9   |               |
| OTHER<br>ALL OLIGOCHAETA              | 143 | 404         | 306 | 6329          |
| POLYCHAETA MANAYUNKIA SPECIOSA        | 4   | 163         | 4   | 1846<br>1846  |
| COPEPODA<br>DIAPTOMUS                 | -   | 24          | 0   |               |
| HARPACTICOIDA                         | 0   | 4           | 0   |               |
| LIMACCALANUS                          | 8   | 0           | 0   |               |
| ALL COPEPODA                          |     |             |     | 468           |

| GRAB COUNTS ESTIMATE TO SOLVE  | TRANSFET 17 STATION 2 (CONT.O.)       |                |          |           |                            |
|--|---------------------------------------|----------------|----------|-----------|----------------------------|
| S  |                                       | GRA            | IB COL   | STNI<br>3 | ESTIMATED<br>NO./SQ. METER |
| Comparison   | # # # # # # # # # # # # # # # # # # # | 20             | 9        | 26        | 386                        |
| PHIPODA  OMIDAE OMIDAE OMIDAE PTERA OPTERA  OPTERA  TERA SYCHIDAE ATOPSYCHE ATOPSYCHE PSYCHE ENIA TERA SYCHIDAE ATOPSYCHE TERA TERA TERA TERA TERA TERA TERA TER   | AMPHIPODA                             |                |          |           |                            |
| LLA AZTECA  LLA AZTECA  PHIPODA  PHIPODA  POGONIDAE  OMIDAE  DAE  POGONIDAE  OMIDAE  OPTERA  OPTERA  AE  SCA  CIDAE  SCA  HEMEROPTERA  TERA  SYCHIOAE  ATOPSYCHE  PSYCHE  TERA  TO DO  | GAMMARUS                              | 9              | ~        | 7         |                            |
| PHIPODA  PHIPODA  POGONIDAE  OMIDAE  OMIDAE  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  SCA  HEMEROPTERA  TERA  SYCHIDAE  ATOPSYCHE  ERIDAE  TERA  SYCHIDAE  ATOPSYCHE  TERA  TERA  TERA  SYCHIDAE  TERA  TER |                                       | ō              | ~        | 0         |                            |
| POGONIDAE  OMIDAE  OMIDAE  DAE  DAE  DAE  OPTERA  OPTERA  AF  SCA  CIDAE  SCA  TERA  SYCHIDAE  ATOPSYCHE  PSYCHE  ERIDAE  ERIDAE  TERA  TERA  TERA  TERA  TERA  TO 0  TO | ALL AMPHIPODA                         |                |          |           | 145                        |
| MALDAE  A A E  A A E  A A A E  A A A E  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A A A B B  A B B  A B B  A B B B  A B B B B   | DIPTERA                               | ĺ              | į        |           |                            |
| E  | CHIRONOMIDAE                          | 6 3            | . 4<br>2 | - 4       | 1377                       |
| E 13 2 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 2 1 1 1 2 1 1 1 2 1                     | EMPIDIDAE<br>All diptera              | o .            | -        | 0         | 1446                       |
| E  | EPHEMEROPTERA<br>Caentdae             |                |          |           |                            |
| E  | CAENIS                                | -              | 6        | 8         |                            |
| 13 99 4  ROPTERA  IDAE  SYCHE  1 0 0  1 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 0 0  1 0 | EPHEMERIDAE                           | !              |          |           |                            |
| E ROPTERA 1 0 0 1 1 0 0 1 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | 15X46FV1A                             | <del>1</del> 3 | on .     | 4         |                            |
| 10AE SYCHE 10AE SYCHE 10AE 10AE 10AE 10AE 10AE 10AE 10AE 10A   | BAETISCIDAE                           | •              |          | ,         |                            |
| ROPTERA  10AE  SYCHE  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  | BAETISCA                              | -              | 0        | 0         |                            |
| SYCHE SYCHE HE HE AE AE SYCHE AC   | ALL EPHEMEROPTERA                     |                |          |           | 227                        |
|  | TRICHOPTERA                           |                |          |           |                            |
| C - 4 0  | HYDROPSYCHIDAE                        |                |          |           |                            |
| - 40   | CHEUMATOPSYCHE                        | 0              | ~        | -         |                            |
| 4 O  | HYD90DSYCHE                           | -              | 0        | 0         |                            |
| 4 0  |                                       |                |          |           | ٠                          |
| DES  | LEPTOCERIDAE                          |                |          |           |                            |
| •  | OECETIS                               | 4              | 4        | 60        |                            |
|  | TRIAENODES                            | 0              | -        | 0         |                            |
|  |                                       |                |          |           |                            |

| MACRUZOUBENTHOS PONAR GRAB COUNT DATA |      |             |      | 5/ 2/84       | /84   |
|---------------------------------------|------|-------------|------|---------------|-------|
| TRANSECT 17 STATION 2 (CONT'D)        |      |             |      |               |       |
|                                       | GRAE | GRAB COUNTS | JNTS | ESTIMATED     | TED   |
| IAXUN                                 | -    | 7           | ი    | NO./SQ. METER | METER |
| ACARINA                               | ស    | ₽           | Ξ    | 179           |       |
| GASTROPODA                            |      |             |      |               |       |
| AMNICOLA                              | 60   | 60          | 4    |               |       |
|                                       | 1    |             |      |               |       |
| CELETA FIGURES                        | 0    | N           | n    |               |       |
| PLEUROCERA ACUTA                      | 4    | 8           | -    |               |       |
|                                       |      |             |      |               |       |
| ALL GASTROPODA                        |      |             |      | 220           |       |
| PELECYPODA                            |      |             |      |               |       |
| SPHAERIIDAE                           |      |             |      |               |       |
| PISIDIUM                              | •    | ô           | o    |               |       |
| ****                                  | •    | 2           | •    |               |       |
| SPHAERIUM                             | -    | ħ.          | 0    |               |       |
|                                       | ,    | ?           |      |               |       |
| ALL SPHAERIIDAE                       |      |             |      | 337           |       |
| ALL PELECYPODA                        |      |             |      | 337           |       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |    |             |      | 5/ 2/84       |
|---------------------------------------|----|-------------|------|---------------|
| DETROIT RIVER TRANSECT 17 STATION 3   | ġ  | SPAR COUNTS | AT A | Catestra      |
|                                       | -  | 6           | 90   | NO./SQ. METER |
| CNIDARIA<br>Hydra                     | 63 | 35          | 141  | 1660          |
| ALL CNIDARIA                          |    |             |      | 1660          |
| RHABDUCOELA                           | -  | 0           | 0    | 7             |
| NEMERTINEA                            | 8  | 8           | 1    | 76            |
| NEMATODA                              | 35 | 4           | 28   | 689           |
| OLIGOCHAETA<br>Spirosperma            | 37 | 11          | 22   |               |
| OTHER<br>ALL OLIGOCHAETA              | 5  | =           | 34   | 1047          |
| MANAYUMKIA SPECIOSA                   | 83 | 323         | 8    | 3347          |
| ALL POLYCHAETA                        |    |             |      | 3347          |
| COPEPODA<br>CYCLOPS BICUSPIDATUS      | 0  | -           | ٥    |               |
| DIAPTOMUS                             | 0  | ო           | 0    |               |
| LIMNDCALANUS                          | +  | -           | 0    |               |
| ALL COPEPODA                          |    |             |      | 7             |
| OSTRACODA                             | 24 | 13          | ĸ    | 289           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |          |       | 5/ 2/84       |
|---------------------------------------|------|----------|-------|---------------|
| TRANSECT 17 STATION 3 (CONT'D)        | GRAE | <u>0</u> | UNTS  | ESTIMATED     |
| TAXON                                 | _    | 7        | 1 2 3 | NO./SQ. METER |
| A<br>116                              |      | •        | •     | <br>          |
|                                       | D    | >        | -     |               |
|                                       | -    | 0        | -     |               |
| ALL AMPHIPODA                         |      |          |       | 99            |
| TERRESTRIAL INSECT                    | -    | 0        | 0     | •             |
| DIPTERA<br>CHIRONOMIDAE               | ю    | a        | •     | <b>6</b> 2    |
| EPHEMEROPTERA                         |      |          |       |               |
| CAENIDAE                              | 0    | 0        | ~     |               |
| FILITIA<br>EPHEMERIDAE<br>HEXADENIA   | c    | c        | -     |               |
| BARTISCIDAR                           | •    | •        | •     |               |
| BAETISCA                              | m    | 0        | -     |               |
| ALL EPHEMEROPTERA                     |      |          |       | 7             |
| TRICHOPTERA<br>Hybropsychtrae         |      |          |       |               |
| CHEUMATOPSYCHE                        | 0    | -        | •     |               |
| ALL TRICHOPTERA                       |      |          |       |               |
| ACARINA                               | 0    | -        | 8     | 21            |
| GASTROPODA .                          |      |          |       |               |
| AMNICOLA                              | IO.  | ø        | 8     |               |
|                                       | -    | 0        | 0     |               |
| PLEUROCERA ACUTA                      | -    | 0        | 0     |               |
| ALL CARABODOS                         |      |          |       | Ş             |
| ALL MASIAUTUDA                        |      |          |       | 2             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |                  |             |     | 5/ 2/84       |
|---|------------------|-------------|-----|---------------|
| TRANSECT 17 STATION 3 (CONT'D)          | SPAB             | GRAB COUNTS | STI | ESTIMATED     |
| TAXON                                   | -                | 1 2 3       | 6   | NO./SQ. METER |
| PELECYPODA                              | ;<br>;<br>;<br>; | ;           | !   |               |
| SPHAERIIDAE                             |                  |             |     |               |
| PISIDIUM                                | Ø                | ო           | 9   |               |
| • |                  |             |     |               |
| SPHAERIUM                               | ~                | -           | ស   |               |
|   |                  |             |     |               |
| ALL SPHAERIIDAE                         |                  |             |     | 179           |
| ALL DELECYBONA                          |                  |             |     | 179           |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA     |      |       |             | 5/ 1/84                 |
|---|------|-------|-------------|-------------------------|
| DETROIT RIVER TRANSECT 18 STATION 1 TAXON |      | AB CC | GRAB COUNTS | ESTIMATED NO./SO. METER |
| FISH<br>ETHEOSTOMA NIGRUM                 | -    | •     | •           |                         |
| ALL FISH                                  |      |       |             | ٢                       |
| RHABDOCOELA                               | Ø.   | -     | ø           | 110                     |
| TRICLADIDA                                | 7    | ĮD.   | 4           | 50                      |
| NEMERTINEA                                | ō    | 0     | <b>5</b>    | 179                     |
| NEMATODA                                  | 8    | -     | 8           | 1026                    |
| OLIGOCHAETA<br>Nais                       | 24   | 0     | 0           |                         |
| SPIROSPERMA                               | 3    | 35    | 11          |                         |
| OTHER<br>ALL OLIGOCHAETA                  | 2423 | 3045  | 2945        | 58674                   |
| COPEPODA<br>CYCLOPS BICUSPIDATUS          | 0    | 0     | -           |                         |
| DIAPTOMUS                                 | 4    | 0     | 0           |                         |
| LIMMOCALANUS                              | e    | 32    | -           |                         |
| ALL COPEPODA                              |      |       |             |                         |
| DSTRACODA                                 | -    | C     | c           | 1                       |

•

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |            |             |            | 5/ 1/84       |
|---------------------------------------|------------|-------------|------------|---------------|
| TRANSECT 18 STATION 1 (CONT'D)        | GRAB       | GRAB COUNTS | 213        | FSTIMATED     |
| TAXON                                 | -          | 7           | , m        | NO./SO. METER |
| AMPHI PODA<br>GAMMARUS                | 4          | -           | <b>©</b>   |               |
| 1 1 2 2 5 0 9 1                       |            |             |            |               |
| HYALELLA AZTECA                       | -          | е           | 0          |               |
| •                                     |            |             |            | 193           |
| DIPTERA                               |            |             |            |               |
| CHIRONOMIDAE                          | <b>Q</b> ( | 4 (         | <b>E</b> . | 383           |
| EMPIDIDAE<br>All Diptera              | 0          | 5           | -          | 388           |
| LEPIDOPTERA                           | -          | 0           | 0          |               |
| TRICHOPTERA                           |            |             |            |               |
| CHEUMA TOPSYCHE                       | -          | 0           | 0          |               |
| HYDROPSYCHE                           | 6          | 0           | 0          |               |
| HYDROPTILIDAE                         |            |             |            |               |
| HYDROPTILA                            | -          | 0           | 0          |               |
| POLYCENTROPODIDAE                     |            |             |            |               |
| NEURECLIPSIS                          | -          | 0           | 0          |               |
| ALL TRICHOPTERA                       |            |             |            | ţ             |
| ODONATA<br>COENAGRIONIDAE             | 8          | ٥           | -          | 2             |
| ACARINA                               | 5          | 0           | m          | 103           |
| TARDIGRADA                            | •          | 0           | 0          | 10            |
|                                       |            |             |            |               |

| DATA            |
|-----------------|
| COUNT           |
| GRAB            |
| PONAR           |
| MACROZOOBENTHOS |

|                  | 8 + 60                                | į  |        |               |
|------------------|---------------------------------------|----|--------|---------------|
| TAXON            | GKAB CUUNIS                           | 3~ | 0<br>E | NO./SQ. METER |
| GASTROPODA       | , , , , , , , , , , , , , , , , , , , |    |        | \$            |
| AMNICOLA         | 2                                     | 0  | 9      |               |
| ****             |                                       |    |        |               |
| ELIMIA LIVESCENS | m                                     | -  | N      |               |
|                  |                                       |    |        |               |
| FERISSIA         | ۵                                     | 4  | 6      |               |
| * 1 ( ) 9 9 9    |                                       |    |        |               |
| GYRAULUS         | 60                                    | 0  | 0      |               |
| 2 1 7 1 1 1 1 1  |                                       |    |        |               |
| PHYSA            | 7                                     | •  | t.     |               |
|                  |                                       |    |        |               |
| ALL GASTROPODA   |                                       |    |        | 516           |
| PELECYPODA       |                                       |    |        |               |
| SPHAERIDAE       | •                                     |    | ,      | 1             |
| PISIDIO          | 64                                    | 0  | 7      | <b>58</b>     |
| ALL PELECYPORA   |                                       |    |        | •             |
|                  |                                       |    |        | 7             |

A-465

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |          | •          |             | 5/ 1/84                    |
|---|----------|------------|-------------|----------------------------|
| DETROIT RIVER TRANSECT 18 STATION 2 TAXON | GRA!     | ۳<br>ه     | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                         | 0        | <b>!</b> - | ٥           |                            |
| ALL CNIDARIA                              |          |            |             | 7                          |
| RHABDOCDELA                               | 0        | 0          | -           | 7                          |
| TRICLADIDA                                | -        | 0          | -           | <u> </u>                   |
| NEMATODA                                  | <b>.</b> | -          | 64          | 572                        |
| OLIGOCHAETA<br>Spirosperma                | 6        | NO.        | 35          |                            |
| OTHER<br>ALL OLIGOCHAETA                  | 415      | 691        | 891 1571    | 20088                      |
|   | 0        | 0          | 8           | 661                        |
| ALL POLYCHAETA                            |          |            |             | 661                        |
|   | 0        | 11         | m           |                            |
| DIAPTOMUS                                 | 0        | <b>5</b>   | -           |                            |
| ALL COPEPODA                              |          |            |             | 255                        |
| DIPTERA                                   | ŗ        | •          | c           | •                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |           |             |     | 5/ 1/84                    | 84           |
|---------------------------------------|-----------|-------------|-----|----------------------------|--------------|
| TRANSECT 18 STATION 2 (CONT'D) TAXON  | GRAB<br>1 | GRAB COUNTS | S E | ESTIMATED<br>ND./SQ. METER | 'ED<br>METER |
| ACARINA                               | 0         | 7           | 6   | 34                         |              |
| TARDIGRADA                            | 9         | 0           | 0   | 110                        |              |
| GASTROPODA<br>Amvicola                | ю         | 0           | -   |                            |              |
| ELIMIA LIVESCENS                      | 0         | -           | 0   |                            |              |
| FERISSIA                              | 0         | 9           | 0   |                            |              |
| PHYSA                                 | -         | 0           | -   |                            |              |
| ALL GASTROPODA                        |           |             |     | 158                        |              |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | 0         | 0           | -   |                            |              |
| ALL DELECYPODA                        |           |             |     | 7                          |              |

B-467

|  |            |       |                | 5/ 1/84                 |
|--|------------|-------|----------------|-------------------------|
| DETROIT RIVER TRANSECT 18 STATION        | <b>6</b>   |       |                |                         |
| TAXON                                    | <b>ĕ −</b> | RAB C | GRAB COUNTS    | ESTIMATED NO./SQ. METER |
| CNIDARIA<br>HYDRA                        | 79         |       |                |                         |
| ALL CNIDARIA                             |            |       |                | - ,                     |
| RHABDOCOELA                              | •          | 8     | -              | t<br>t c                |
| NEMATODA                                 | 0          | 0     | · <del>-</del> | 2                       |
| OLIGOCHAETA<br>NAIS                      | 132        | 0     | 192            |                         |
| SPIROSPERMA                              | 7.1        | N)    | 4              |                         |
| OTHER<br>ALL OLIGOCHAETA                 | 4263       | 1217  | 5728           |                         |
| MANAYUMKIA SPECIOSA                      | 0          | 64    | 0              | 441                     |
| ALL POLYCHAETA                           |            |       |                | . 44                    |
| COPEPODA<br>LIMNOCALANUS<br>ALL COPEPODA | •          | 8     | -              | 2 2                     |
| OSTRACODA                                | -          | 0     | 0              |                         |
| AMPHIPODA<br>GAMMARUS                    | -          | 0     | •              |                         |
| HYALELLA AZTECA                          | 8          | 0     | 0              |                         |
| ALL AMPHIPODA                            |            |       |                | 21                      |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |          |                |     | 5/ 1/84       |
|---|----------|----------------|-----|---------------|
| TRANSECT 18 STATION 3 (CONT'D)                  | 9405     | STAIN CO. BAGS | 2   | 661144160     |
| TAXON   | -        | 8              | . w | NO./SQ. METER |
| MIDAE   | 58       | ~              |     | 220           |
| FSICHOLIDAE<br>ALL DIPTERA                      | <b>-</b> | <b>5</b>       | >   | 296           |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA       | •        | -              | ۰   |               |
| ALL EPHEMEROPTERA                               |          |                |     |               |
| LEPIDOPTERA                                     |          | 0              | 0   | 46            |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | <b>е</b> | ٥              | ٥   |               |
| HYDROPSYCHE                                     | 6        | 0              | 0   |               |
| HYDROPTILIDAE<br>ORTHOTRICHIA                   | -        | •              | 0   |               |
| LEPTOCERIDAE<br>TRIAENODES                      | -        | 0              | 0   |               |
| POLYCENTROPODIDAE<br>POLYCENTROPUS              | 8        | •              | 0   |               |
| ALL TRICHOPTERA                                 |          |                |     | 69            |
| ODONATA<br>CDENAGRIONIDAE                       | 6        | 0              | 0   | 21            |
| ACARINA   | 9        | c              | 4   | 98            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |     | 5/ 1/84       |
|---------------------------------------|------|-------------|-----|---------------|
| TRANSECT 18 STATION 3 (CONT'D) TAXON  | GRAB | GRAB COUNTS | SES | ESTIMATED     |
| 1                                     |      |             | 9   | NO./SQ. METER |
| GASTROPODA<br>AMNI COLA               | -    | 0           | 0   |               |
| ELIMIA LIVESCENS                      | ٥    | 0           | ~   |               |
| FERISSIA                              | NO.  | 0           | 0   |               |
| PHYSA                                 | -    | 0           | 0   |               |
| VALVATA SINCERA                       | 0    | 0           | -   |               |
| ALL GASTROPODA                        |      |             |     | <b>6</b> 9    |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | ٥    | <b>8</b> 0  | 2   | 178           |
| ALL PELECYPODA                        |      |             |     | 120           |

| DETROIT RIVER TRANSECT 19 STATION |          |             |           |                         |
|-----------------------------------|----------|-------------|-----------|-------------------------|
|                                   | - ق<br>- | GRAB COUNTS | UNTS<br>3 | ESTIMATED NO / SO METED |
| RHABDOCOELA                       | 31       | Ş           | 21        | 634                     |
| TRICLADIDA                        | 8        | 9           | -         | 62                      |
| NEMERTINEA                        | 6        | 13          | ВĎ        | 255                     |
| NEMATODA                          | 144      | 96          | <b>78</b> | 1846                    |
| OLIGOCHAETA<br>SPIROSPERMA        | 194      | 318         | 6         |                         |
| OTHER<br>ALL OLIGOCHAETA          | 1545     | 1545 2497   | 3102      | 53007                   |
|                                   | 11       | 32          | 99        | 792                     |
| ALL POLYCHAETA                    |          |             |           | 192                     |
| COPEPODA<br>CYCLOPS BICUSPIDATUS  | 0        | 0           | ~         |                         |
| DIAPTONUS                         | 0        | <b>9</b>    | 0         |                         |
| HARPACTICOIDA                     | 5        | 0           | 0         |                         |
| LIMNOCALANUS                      | 0        | 0           | •         |                         |
| ALL COPEPODA                      |          |             |           | . 541                   |
| OSTRACODA                         | 8        | 0           | c         | *                       |

B-471

|                                 |     |             |          | 5/ 1/84                 |
|---------------------------------|-----|-------------|----------|-------------------------|
| TRANSECT 19 STATION 1 (CONT'D)  |     |             |          |                         |
| TAXON                           | g - | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER |
| AMPHI PODA<br>Gammarus          |     | \$          | ,        |                         |
| ALL AMPHIPODA                   | •   | ?           | •        |                         |
| DIPTERA                         |     |             |          | <u>:</u>                |
| CERATOPOGONIDAE<br>CHIRDNOMIDAE | 4.  | 6           | 7        |                         |
| EMPIDIDAE                       | 4 - | n (         | 0 0      | <b>4</b>                |
| PSYCHODIDAE<br>All Dibteba      | -   | 0           | 0        |                         |
|                                 |     |             |          | 303                     |
| EPHEMEROPTERA                   |     |             |          |                         |
| CAENIDAE                        |     |             |          |                         |
| CAENIS                          | 0   | 8           | 0        |                         |
| EPHEMERIDAE                     |     |             |          |                         |
| HEXAGENIA                       | -   | -           | 2        |                         |
| ALL EPHEMEROPIERA               |     |             | l        |                         |
|                                 |     |             |          | 4                       |
| LEPIDOPTERA                     | -   | -           | 0        | 4-                      |
| TRICHOPTERA                     |     |             |          |                         |
| HYDROPSYCHIDAE                  |     |             |          |                         |
| CHEUMATOPSYCHE                  | 0   | 0           | -        |                         |
| HYDROPTILIDAE                   |     |             |          | •                       |
| DRTHOTRICHIA                    | 0   | 8           | 0        |                         |
| ALL TRICHOPTERA                 |     |             |          | į                       |
|                                 |     |             |          | 21                      |
| ACARINA                         | 14  | 6           | ,        | ,,,                     |

| TRANSECT 19 STATION 1 (CONT'D)  TAXON  TAXON  GRAB COUNTS ESTIMATED  1 2 3 NO./So. METER  GASTROPODA  AMNICOLA  ELIMIA LIVESCENS  CONTACT  ON 0 4  FERISSIA  GYRAULUS  PHYSA  ALL GASTROPODA  SPHAERIIDAE  PISIDIUM  STATION  STATIO | MACHINE PUNAR GRAB COUNT DATA            |     |             |      | 5/ 1/84                |
|--|--|-----|-------------|------|------------------------|
| GRAB COUNTS 1 2 3 1 2 3 1 1 2 11 IVESCENS 0 0 4 0 1 0 2 2 1 0PODA AE 5 14 18   | TRANSECT 19 STATION 1 (CONT'D)           |     |             |      |                        |
| T 12 11  IVESCENS  0 0 4  8 4 24  0 1 0  2 2 1  AE  T 12 11  T 12  | TAXON                                    | GRA | 8<br>0<br>0 | JNTS | ESTIMATED NO /SO METER |
| IVESCENS  O 0 4  B 4 24  OPODA  AE  5 14 18  | GASTROPODA                               |     |             |      |                        |
| IVESCENS 0 0 4  OPODA  PPODA  PPODA  PPODA  PPODA  | AMNICOLA                                 | •   | ;           | ;    |                        |
| AE  TVESCENS  0 0 4  0 1 24  0 1 0  2 2 1  New YOODA   | •  | •   | 7           | =    |                        |
| DPODA  PPODA  PPODA  PPODA   | ELIMIA LIVESCENS                         | c   | •           | •    |                        |
| B 4 24  DPODA  AE  5 14 18   |  | >   | >           | •    |                        |
| DPODA 2.4  AE 5 14 18  | FERISSIA                                 | •   | •           | ,    |                        |
| DPODA 2 2 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0  |  | 0   | ŧ           | *    |                        |
| DPODA  AE  5 14 18   | GYRAULUS                                 | •   | •           | (    |                        |
| 2 2 1 DPODA . AE 5 14 18   |  | >   | -           | >    |                        |
| DPODA  | PHYSA                                    | •   | •           |      |                        |
| DPODA  |  | ٧   | N           | -    |                        |
| AE 5 14 18 YPODA   | ALL GASTROPODA                           |     |             |      | R03                    |
| AE<br>5 14 18<br>PPODA   | PELECYPODA                               |     |             |      | }                      |
| 10<br>4.   | SPHAERIDAE                               |     |             |      |                        |
| 2  | PISIDIUM                                 | MT  | 7           | q    | M<br>M<br>C            |
|  | \$ • • • • • • • • • • • • • • • • • • • | •   | :           | 9    | 667                    |
|  | ALL PELECYPODA                           |     |             |      |                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |          |             |          | 5/ 1/84                    |
|---|----------|-------------|----------|----------------------------|
| DETROIT RIVER TRANSECT 19 STATION 2 TAXON | - 6R     | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| NEWERTINEA                                | =        | 43          | 60       | 427                        |
| NEMATODA                                  | 66       | 24          | 24       | 943                        |
| OLIGOCHAETA<br>SPIROSPERMA                | 4<br>R   | 9           | 5        |                            |
| OTHER<br>ALL OLIGOCHAETA                  | <u>.</u> | 167         | 9        | 3195                       |
|   | 0        | 0           | -        |                            |
| LIMNOCALANUS                              | 0        | <b>ec</b>   | •        | 62                         |
| DIPTERA<br>CHIROMOMIDAE                   | 0        | €0          | 0        | 52                         |
| EPHEMERIDAE<br>EPHEMERIDAE<br>HEXAGENIA   | 8        | 8           | 0        |                            |
| BAETISCIDAE<br>BAETISCA<br>               | 0        | -           | 0        |                            |
| GASTROPODA<br>APPICOLA                    | 7        | -           | 8        |                            |
| ELIMIA LIVESCENS                          | -        | 7           | 0        | SS                         |

|                                     |            |             |           | <b>*</b> 9/1 /c            |
|-------------------------------------|------------|-------------|-----------|----------------------------|
| DETROIT RIVER TRANSECT 19 STATION 3 |            | 1           |           |                            |
| TAXON                               | <b>2</b> ← | GRAB COUNTS | STAU<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                   | ٥          | -           | 0         |                            |
| ALL CNIDARIA                        |            |             |           |                            |
| RHABDOCDELA                         | -          | 0           | -         | 4                          |
| NEMERTINEA                          | <b>.</b>   | NO.         | -         | 165                        |
| NEMATODA                            | ю          | 4           | •         | 103                        |
| OLI QOCHAETA<br>SPIROSPERMA         | 7          | 5           | ě         |                            |
| OTHER<br>ALL OLIGOCHAETA            | 181        | 20          | 237       | 3271                       |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA   | õ          | 8           | 80        | 751                        |
| ALL POLYCHAETA                      |            |             |           | 751                        |
| COPEPODA<br>CYCLOPS BICUSPIDATUS    | m          | 0           | •         |                            |
| DIAPTORUS                           | 8          | 0           | 0         |                            |
| HARPACTICOIDA                       | -          | 0           | 0         |                            |
| LIMOCALANUS                         | -          | -           | •         |                            |
| ALL COPEPODA                        |            |             |           | 110                        |
| OSTRACODA                           | 0          | 0           | -         | 7                          |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA     |           |             |     | 5/ 1/84            |
|---|-----------|-------------|-----|--------------------|
| TRANSECT 19 STATION 3 (CONT'D)            |           |             |     | •                  |
| TAXON                                     | GRAE<br>1 | GRAB COUNTS | STS | ESTIMATED NO VETER |
| AMPHIPODA                                 |           |             |     |                    |
|   | 0         | -           | 0   | 1                  |
| ALL AMPHIPODA                             |           |             |     | 1                  |
| DIPTERA                                   |           |             |     | •                  |
| CHIMOMORIDAE                              | 8         | -           | ED. | 50                 |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>LIEVAGERI |           |             |     |                    |
| ALL EPHEROPIEDA                           | -         | 0           | 0   |                    |
| TRICHOPTERA                               |           |             |     | •                  |
| HYDROPSYCHIDAE<br>Cheumatopsyche          | ¢         |             | (   |                    |
|   | >         | -           | 5   |                    |
|   | 0         | _           | 0   |                    |
| ALL TRICHOPTERA                           |           |             |     | 7                  |
| ACARINA                                   | -         | ~           | o   | : ;                |
| GASTROPODA                                |           |             | ,   | ;                  |
| AMNICOLA                                  | -         | 0           | 0   |                    |
| ELIMIA LIVESCENS                          | 0         | -           |     |                    |
| THE   | . •       |             |     |                    |
|   | -         | 0           | 0   |                    |
| ALL GASTRUDODA                            |           |             |     |                    |

| DETROIT RIVER TRANSECT 20 STATION | -          | Š          |           | 1                       |
|-----------------------------------|------------|------------|-----------|-------------------------|
| TAXON                             | <b>5</b> - | 1 2 3      | 200       | ESTIMATED NO./SQ. METER |
| CNIDARIA<br>HYDRA                 | 0          | 9          | 6         | 06                      |
| ALL CNIDARIA                      |            |            |           | 06                      |
| RHABDOCOELA                       | 0          | 4          | 0         | 28                      |
| TRICLADIDA                        | 0          | 0          | ო         | 24                      |
| NEMERTINEA                        | 0          | 0          | -         |                         |
| NEMATODA                          | 60         | <b>5</b> 6 | 20        | 372                     |
| OLIGOCHAETA<br>Nais               | 80         | -          | 8         |                         |
| SPIROSPERMA                       | 8          | 0          | 0         |                         |
| STYLARIA                          | -          | -          | 0         |                         |
| OTHER<br>ALL OLIGOCHAETA          | 227        | ā          | <b>LO</b> | 1811                    |
| COPEPODA<br>CYCLOPS BICUSPIDATUS  | 63         | 0          | 0         |                         |
| DIAPTOMUS                         | •          | 4          | ო         |                         |
| LIMNOCALANUS                      | 0          | -          | 0         |                         |
| ALL COPEPODA                      |            |            |           | 165                     |

| MACROZODBENTHOS PONAR GRAB COUNT DATA  |       |             |      | 5/ 2/84                   |
|--|-------|-------------|------|---------------------------|
| TRANSECT 20 STATION 4 (CONT'D) TAXON   | GRA - | GRAB COUNTS | JNTS | ESTIMATED<br>NO./SO.METER |
| ANPHIPODA<br>Gannarus  | c     |             | ur.  |                           |
| HYALELLA AZTECA  | • •   | <b>6</b>    | 0    |                           |
| ALL AMPHIPODA  |       |             |      | 158                       |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE<br>All DIPTERA  | 00    | £ -         | 35   | 310                       |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>HYDROPSYCHE   | -     | •           | •    |                           |
| HYDROPTILIDAE<br>HYDROPTILA  | 0     | -           | •    |                           |
| POLYCENTROPODIDAE<br>NEURECLIPSIS  | 0     | •           | 8    |                           |
| ALL TRICHOPTERA  |       |             |      | <b>58</b>                 |
| ODONATA<br>COENAGRIONIDAE  | 0     | 0           | 77   | 7                         |
| ACARINA  | 0     | 6           | ĸ    |                           |
| GASTROPODA AMAICOLA  | -     | 0           | 0    |                           |
| ELIMIA LIVESCENS   | -     | 0           | 0    |                           |
| TISTING THE TENT OF THE TENT O | 0     | 0           | е    |                           |
| PHYSA  | 0     | -           | 0    |                           |
| ALL GASTROPODA   |       |             |      | <b>4</b>                  |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA       |            |             |           | 5/ 2/84                    |
|---|------------|-------------|-----------|----------------------------|
|   | <b>8</b> + | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NG./SQ. METER |
| RHABDOCOELA                                 | -          | 0           | 0         | 7                          |
| TRICLADIDA                                  | -          | . 0         | 0         | •                          |
| NEMERTINEA                                  | -          | 0           | 8         | 21                         |
| NEMATODA                                    | 73         | 469         | 97        | 4401                       |
| OLIGOCHAETA<br>Spirosperma                  | 4          | ო           | 8         |                            |
| OTHER<br>ALL OLIGOCHAETA                    | 2          | <u>r</u>    | 59        | 1260                       |
| POLYCHAETA MANAVUMKIA SPECIOSA              | -          | ٥           | -         | ,<br><b>4 4</b>            |
| CLADOCERA DAPHNIA                           | -          | 0           | 0         | <b>F</b>                   |
| ALL CLADUCERA COPEPODA CYCLOPS BICUSPIDATUS | 6          | 0           | 8         |                            |
| DIAPTOMUS                                   | č          | 0           | •         |                            |
| LIMNOCALANUS                                | -          | 0           | 0         |                            |
| ALL COPEPODA                                |            |             |           | 200                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |     | 7/ 2/84                |
|---------------------------------------|------|-------------|-----|------------------------|
| TRANSECT 20 STATION 2 (CONT'D)        |      |             |     | 10/1                   |
| TAXON                                 | GRA! | GRAB COUNTS | STS | ESTIMATED NO /co Meter |
| AMPH I PODA<br>GAMMARUS               |      | ,           | ,   |                        |
|                                       | -    | 0           | 0   | 7                      |
| ALL AMPHIPODA                         |      |             |     | ,                      |
| TERRESTRIAL INSECT                    | -    | c           | c   | r                      |
| DIPTERA                               | •    | ,           | >   | -                      |
| CHIRONOMIDAE                          | -    | Œ           | -   | ç,                     |
| TRICHOPTERA                           | •    | •           | -   | D<br>P                 |
| HYDROPSYCHIDAE                        |      |             |     |                        |
| CHEUMATOPSYCHE                        | 0    | ٥           | -   |                        |
| ALL TRICHOPTERA                       |      |             |     | ,                      |
| ACADINA                               |      |             |     | •                      |
|                                       | 0    | 0           | -   | 1                      |
| GASTROPODA                            |      |             |     |                        |
| ELIMIA LIVESCENS                      | 8    | ~           | 6   | **                     |
| ALL GASTROPODA                        |      |             |     | •                      |

| 2/8                                  |
|--------------------------------------|
| 2                                    |
|                                      |
|                                      |
|                                      |
|                                      |
|                                      |
|                                      |
|                                      |
|                                      |
| •                                    |
| DAT                                  |
| Ę                                    |
| 9                                    |
| 9                                    |
| 8                                    |
| ¥                                    |
| Ď                                    |
| SQ.                                  |
| Ė                                    |
| 8                                    |
| ACROZOOBENTHOS PONAR GRAB COUNT DATA |
| S.                                   |
| Ž                                    |

|                                     |          |             |      | 10/7 /0                    |
|-------------------------------------|----------|-------------|------|----------------------------|
| DETROIT RIVER TRANSECT 20 STATION 3 |          | į           | !    |                            |
|                                     | - G      | GRAB COUNTS | SING | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                   | 0        | 9           | 7    | 83                         |
| ALL CNIDARIA                        |          |             |      | 89                         |
| NEMERTINEA                          | 60       | 52          | -    | 489                        |
| NEMATODA                            | <u>e</u> | 69          | 160  | 2204                       |
| OLIGOCHAETA<br>Spirosperma          | î.       | •           | 60   |                            |
| STYLARIA                            | -        | 0           | 0    |                            |
| OTHER<br>ALL OLIGOCHAETA            | 129      | Ë           | ę    | 1598                       |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA   | -        | 0           | 24   | 172                        |
| ALL POLYCHAETA                      |          |             |      | 172                        |
| CVCLODS BICUSPIDATUS                | <b>o</b> | -           | 0    |                            |
| DIAPTOMUS                           | ō        | RD.         | -    |                            |
| HARPACTICOIDA                       | 0        | 0           | 16   |                            |
| LIMNOCALANUS                        | 50       | 0           | -    |                            |
| ALL COPEPODA                        |          |             |      | 434                        |
| AMPHI PODA<br>GAMMARUS              | 0        | •           | -    | ٠                          |
| ALL AMPHIPODA                       |          |             |      | •                          |

| TRANSECT 20 STATION 3 (CONT'D)         GRAB COUNTS         ESTIMATED           TAXON         1 2 3 NO./SQ. METE           DIPTERA         0 2 2 2 28           CHIRONOMIDAE         0 3 2           EPHEMEROPTERA         0 3 2           HEXAGENIA         0 3 2           HEXAGENIA         0 3 2           ALL EPHEMEROPTERA         0 0 3           ALL EPHEMEROPTERA         0 0 2           HVDROPSYCHIDAE         0 0 1 2           HVDROPSYCHE         0 0 1 2           HVDROPSYCHE         0 0 1 2           ALL TRICHOPTERA         0 0 1 2           HVDROPSYCHE         0 0 1 2           ACARINA         0 0 1 2           ACARINA         0 0 2           ALL GASTROPODA         3 0 2 34 | MACKUZUUBENIHUS PONAR GRAB COUNT DATA           |      |      |           | 5/ 2/84                    |
|--|---|------|------|-----------|----------------------------|
| GRAB COUNTS 1 2 3 3 0 2 2 2 0 0 3 2 2 0 0 1 2 0 0 2 0 0 2 3 0 2  | TRANSECT 20 STATION 3 (CONT'D)                  |      |      |           |                            |
|  |   | - GR | 8 CQ | STAL<br>3 | ESTIMATED<br>NO./SQ. METER |
|  | OMIDAE  | ٥    | 8    |           | 28                         |
|  | EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA       | c    | •    | 0         |                            |
|  | BAETI SCIDAE<br>BAETI SCA                       | , ,  | , (  |           |                            |
| 3 0 0 0  | ALL EPHEMEROPTERA                               | >    | >    |           | <b>1</b> 0                 |
| 0 0 0  | TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | 0    | -    | N         | 1                          |
|  | HYDROP SYCHE                                    | 0    | 0    | ~         |                            |
| 3 0 0  | ALL TRICHOPTERA                                 |      |      |           | 9 <b>.</b>                 |
| 3 0  | ACARINA   | ٥    | ٥    | ~         | 7                          |
|  | GASTROPODA<br>ELIMIA LIVESCENS                  | 6    | 0    | и         | <b>9</b> 6                 |
|  | ALL GASTROPODA                                  |      |      |           | 96                         |

| MACROZDOBENTHOS PONAR GRAB COUNT DATA |            |      |       | 5/ 2/84       |
|---------------------------------------|------------|------|-------|---------------|
| DETROIT RIVER TRANSECT 21 STATION     | 8          |      | 27141 | 2             |
| TAXON                                 | <b>5</b> – | 2    | n en  | NO./SQ. METER |
|                                       | 60         | 0    | -     | 89            |
| ALL CNIDARIA                          |            |      |       | 69            |
| RHABDOCOELA                           | 22         | 38   | 24    | 585           |
| TRICLADIDA                            | 4          | 9    | 0     | 69            |
| NEMERTINEA                            | -          | 6    | 8     | 152           |
| NEMATODA                              | 67         | 192  | 145   | 2782          |
| OLIGOCHAETA<br>Nais                   | 0          | 16   | •     |               |
| SPIROSPERMA                           | 4          | 24   | 0     |               |
| OTHER<br>ALL OLIGOCHAETA              | 669 1180   | 1180 | 916   | 19413         |
| POLYCHAETA<br>Manayunkia speciosa     | 5          | 9    | 0     | 220           |
| ALL POLYCHAETA                        |            |      |       | 220           |
| COPEPODA<br>CYCLOPS BICUSFIDATUS      | -          | 8    | 0     | ·             |
| DIAPTOMUS                             | 0          | 16   | 0     |               |
| LIMMOCALAMUS                          | 0          | 8    | 0     |               |
| ALL COPEPODA                          |            |      |       | 145           |

I

| DATA               |
|--------------------|
| AR GRAB COUNT      |
| GRAB               |
| Ž                  |
| MACROZOOBENTHOS PO |

5/ 2/84

| TRANSECT 21 STATION 1 (CONT'D)                            | GRAB           | GRAB COUNTS | က် မ | ESTIMATED<br>NO./SQ. METER |
|---|----------------|-------------|------|----------------------------|
| TAXON   |                |             |      |                            |
| ρĄ  | -              | 0           | 0    | •                          |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIROMOMIDAE<br>ALL DIPTERA | ю <del>с</del> | 0 0         | ~ n  | 131                        |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche           | 0              | 6           | ٥    |                            |
| HYDROPSYCHE   | -              | 4           | 0    |                            |
| HYDROPTILIDAE<br>HYDROPTILA                               | 0              | -           | 0    |                            |
| POLYCENTROPODIDAE<br>NEURECLIPSIS                         | -              | -           | 0    | 91                         |
| ALL TRICHOPTERA   | ĸ              | -           | -    | . <b>4</b>                 |
| ACARINA   | י              | •           | •    |                            |
| GASTROPODA<br>AWNI COLA                                   | £              | 5           | €    |                            |
| ELIMIA LIVESCENS  | ۵              | -           | 0    |                            |
| FERISSIA  | e .            | 8           | 0    |                            |
| GYRAULUS  | 0              | -           | 0    |                            |
| PHYSA   | 0              | -           | 0    |                            |
| ALL GASTROPODA  |                |             |      | 282                        |

•

ESTIMATED NO./SQ. METER 5/ 2/84 588 599 GRAB COUNTS 16 **\$** <u>ب</u> MACROZOOBENTHOS PONAR GRAB COUNT DATA TRANSECT 21 STATION 1 (CONT'D) PELECYPODA SPHAERITDAE PISIDIUM ALL PELECYPODA TAXON

B-485

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | IR GRAB COUNT DATA                    |     |                      |           | 5/ 2/84                    |
|---------------------------------------|---------------------------------------|-----|----------------------|-----------|----------------------------|
| RIVER                                 | TRANSECT 21 STATION 2                 | GR. | GRAB COUNTS<br>1 2 3 | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA                              | , , , , , , , , , , , , , , , , , , , | 0   | ç                    | 0         | 69                         |
| ALL CNIDARIA                          |                                       |     |                      |           | 69                         |
| RHABDOCOELA                           |                                       | 8   | €                    | 0         | 138                        |
| TRICLADIDA                            |                                       | o   | ID.                  | 0         | 34                         |
| NEMERTINEA                            |                                       | 41  | ~                    | -         | 344                        |
| NEMATODA                              |                                       | 36  | 53                   | 16        | 969                        |
| OLIGOCHAETA<br>Nais                   |                                       | 0   | 4                    | 0         |                            |
| SPIROSPERMA                           |                                       | t.  | ∞                    | 8         |                            |
| STYLARIA                              |                                       | 0   | -                    | 0         |                            |
| OTHER<br>ALL OLIGOCHAETA              |                                       | 433 | 99                   | 894       | 9800                       |
|                                       | 4                                     | 251 | 0                    | 0         | 1729                       |
| ALL POLYCHAETA                        | •                                     |     |                      |           | 1729                       |

| MACKUZUUBENTHUS PONAR GRAB COUNT DATA | T DATA      |             |           | 2/ 2/64                 |
|---------------------------------------|-------------|-------------|-----------|-------------------------|
| TRANSECT 21 STATION 2 (CONT'D)        |             |             |           |                         |
|                                       | GRA<br>1    | GRAB COUNTS | UNTS<br>3 | ESTIMATED NO./SQ. METER |
| S BICUSP                              | 1           |             | ,         |                         |
|                                       | 70          | 74          | 0         |                         |
| CYCLOPS VERNALIS                      | ď           | •           | c         |                         |
|                                       | •           | •           | >         |                         |
| DIAPTOMUS                             | Ø           | e           | 24        |                         |
|                                       |             | ,           |           |                         |
| 14114C-1C010A                         | 0           | <b>6</b>    | 0         |                         |
| LIMNOCALANUS                          | <b>15</b> 7 | c           | •         |                         |
| ALL COPEDODA                          | •           | •           | •         |                         |
|                                       |             |             |           | 434                     |
| AMPHIPODA                             |             |             |           |                         |
| GAMMARUS                              |             | NO.         | 0         |                         |
|                                       | •           | )           | •         |                         |
| TALELLA AZIEGA                        | •           | 00          | 0         |                         |
| ALL AMPHIPODA                         |             |             |           | <b>9</b>                |
| DIPTERA                               |             |             |           |                         |
| CHIRONOMIDAE                          | •           | 38          | -         | 269                     |
| EPHEMEROPTERA                         |             |             |           |                         |
| EPHEMERIDAE                           |             |             |           |                         |
| HEXAGENIA                             | 8           | 0           | 0         |                         |
| ALL EPHEMEROPTERA                     |             |             |           | ;                       |
|                                       |             |             |           | •                       |
| LEPIDOPTERA                           | 0           | -           | 0         | ,                       |
| TRICHOPTERA<br>HYDDODII: 15AE         |             |             |           |                         |
| HYDROPTILA                            | 0           | -           | 0         |                         |
| ALL TRICHOPTERA                       |             |             | •         | ۲                       |
| COONATA                               |             |             |           |                         |
| COENAGRIONIDAE                        | c           | •           | •         | •                       |

| MACROZGOBENTHOS PONAR GRAB COUNT DATA |           |             |           | 5/ 2/84                    | _   |
|---------------------------------------|-----------|-------------|-----------|----------------------------|-----|
| TRANSECT 21 STATION 2 (CONT'D)        |           |             |           |                            |     |
| TAXON                                 | GRAB<br>1 | GRAB COUNTS | STS<br>33 | ESTIMATED<br>NO./SQ. METER | TER |
| ACARINA                               | -         | 4           | 0         | 34                         | !   |
| GASTROPODA                            |           |             |           |                            |     |
| AMNICOLA                              | -         | ~           | 7         |                            |     |
| ELIMIA LIVESCENS                      | -         | 7           | 8         |                            |     |
| TERMINON A                            | c         | •           | c         |                            |     |
| ***                                   | •         | )           | •         |                            |     |
| PLEUROCERA ACUTA                      | 0         | 0           | -         |                            |     |
| ALL GASTROPODA                        |           |             |           | 131                        |     |
| PELECYPODA<br>Sphafbithae             |           |             |           |                            |     |
| MISIDIAN                              | 8         | 4           | 0         | <b>~</b>                   |     |
| ALL PELECYPODA                        |           |             |           | 4                          |     |

| DETROIT RIVER                    | TRANSECT 21 STATION 3                          | 200    | Ş        | 9116     | 1  |
|----------------------------------|--|--------|----------|----------|--|
| TAXON                            |  | ,<br>- | 1 2 3    | n en     | NO./SO. METER  |
| CNIDARIA                         |  |        |          |          | !<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>!<br>! |
| ATURA                            |  | 2      | m        | -        | 138  |
| ALL CNIDARIA                     |  |        |          |          | 138  |
| TRICLADIDA                       |  | ĸ      | 0        | 8        | 4  |
| NEMERTINEA                       |  | -      | m        | •        | 6.   |
| NEMATODA                         |  | 25     | 8        | <u>.</u> | 1911   |
| OLIGOCHAETA<br>Spirosperma       |  | -      | -        | 6        |  |
| OTHER<br>ALL OLIGOCHAETA         |  | 22     | <b>2</b> | 1        | 331  |
|                                  | 10SA   | 36     | 8        | n        | 275  |
| ALL POLYCHAETA                   | 1 <b>0</b> 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |        |          |          | 275  |
| CLADOCERA<br>DAPHNIA             |  | •      | 0        | -        | •  |
| ALL CLADOCERA                    |  |        |          |          | 7  |
| COPEPODA<br>CYCLOPS BICUSPIDATUS | DATUS  | 8      | 0        | 0        | ٠  |
| DIAPTOMUS                        | 1<br>2<br>1<br>0<br>5                          | =      | 5        | 5        |  |
| LIMNOCALANUS                     |  | 6      | -        | 4        |  |
| ALL COPEPODA                     |  |        |          |          | 282  |

| TRANSECT 21 STATION 3 (CONT.D)  TAXON AMPHIPODA GAMMARIS |          |             |               |                            |
|--|----------|-------------|---------------|----------------------------|
| TAXON AMPHI PODA GAMMADIS                                | I        |             |               |                            |
| AMPHIPODA<br>AMMADIIS                                    | GRA<br>- | GRAB COUNTS | S 6           | ESTIMATED<br>NO./SQ. METER |
|  | 0        | -           | -             | 7                          |
| ALL AMPHIPODA  |          |             |               | 2                          |
| DIPTERA<br>CHIRONOMIDAE                                  | •        | -           | ø             | 103                        |
| EPHEMEROPTERA<br>EPHEMERIDAE                             |          |             |               |                            |
| HEXAGENIA  | 0        | 8           | 0             |                            |
| BAETISCIDAE BAETISCA                                     | e        | <b>6</b>    | 6             |                            |
| ALL EPHEMEROPTERA  |          |             |               | 76                         |
| TRICHOPTERA<br>HYDROPSYCHIDAE                            | :        | ı           | (             |                            |
|  | 9        | m           | <sub>10</sub> |                            |
| HYDROPSYCHE  | 16       | 0           | <b>®</b>      |                            |
| HYDROPTILIDAE<br>HYDROPTILA                              | 0        | 0           | 8             |                            |
| POLYCENTROPODIDAE  |          | ,           |               |                            |
| NECEL PSIS   | -        | 0           | N             |                            |
| ALL TRICHOPTERA  |          |             |               | 372                        |
| GASTROPODA   | •        | (           |               |                            |
| AMNICULA   | 0        | 0           | -             |                            |
|  | ιΩ       | -           | ø             |                            |
| PHYSA  | 0        | 0           | -             |                            |
| ALL GASTROPODA   |          |             |               | 117                        |

(

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |             |              | 10/16/84      |
|---|-----|-------------|--------------|---------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 1    |     | GRAB COUNTS | SIN          | ESTIMATED     |
| TAXON                                   | -   | 7           | 6            | NO./SQ. METER |
| NEMATODA                                | 0   | -           | 0            |               |
| OL I GDCHAETA                           | 7   | 7           | 8            | Ŧ             |
| CLADGERA<br>BOSMINA                     | 60  | 4           | <b>E</b> O   |               |
|   | ' i | 7           | 9            |               |
| DAPHNIA                                 | ž.  | 24          | 58           |               |
| HOLOPEOTUM                              | 25  | 2           | =            |               |
| LEPTODORA KINDTII                       | 0   | 0           | -            |               |
| ALL CLADOCERA                           |     |             |              | 1171          |
| COPEPODA<br>CYCLOBE BICLEDIDATILE       | •   | •           | o            |               |
| 111111111111111111111111111111111111111 | 1   |             | •            |               |
| DIAPTOMUS                               | ₹   | -           | <del>5</del> |               |
| ALL COPEPODA                            |     |             |              | 213           |
| OSTRACODA                               | 0   | 0           | -            | 7             |
| TERRESTRIAL INSECT                      | -   | 0           | 8            | 2             |
| DIPTERA<br>Chiromonidae                 | •   | 7           | 22           | 255           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |                  |       |             | 10/16/84                |
|---------------------------------------|------------------|-------|-------------|-------------------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 2  | 9                | į     |             |                         |
| TAXON                                 | ¥<br>¥<br>5<br>- | 4 2 3 | 2<br>0<br>0 | ESTIMATED NO./SQ. METER |
| CNIDARIA                              | 0                | 7     | 0           | 44                      |
| ALL CNIDARIA                          |                  |       |             | 4                       |
| OLIGOCHAETA<br>STYLARIA               | 0                | -     | 0           |                         |
| ALL OLIGOCHAETA                       |                  |       |             | •                       |
| CLADOCERA<br>BOSMINA                  | 6                | . 0   | 4           |                         |
| DAPINIA                               | 83               | 4     | 93          |                         |
| HOLOPEDIUM                            | 13               | ō     | 11          |                         |
| ALL CLADOCERA                         |                  |       |             | 1219                    |
| COPEDODA                              |                  |       |             |                         |
| CYCLUP'S BICUSPIDATUS                 | N                | -     | 4           |                         |
| DIAPTOMUS                             | 0                | 4     | 9           |                         |
| EPISHURA LACUSTRIS                    | 0                | -     | -           |                         |
| MESOCYCLOPS                           | -                | 0     | 0           |                         |
| ALL COPEPODA                          |                  |       |             | 227                     |
| AMPHI PODA<br>GAMPARUS                | ٥                | -     | o           | •                       |
| ALL AMPHIPODA                         |                  |       |             |                         |
| TERRESTRIAL INSECT                    | 0                | 8     | ٥           | 7                       |
| DIPTERA<br>CHIRONOMIDAE               | 60               | ø     | <b>æ</b>    | 241                     |

| MACRUZUUBENINGS PUNAN GRAB CUUNI UAIA  |       |             |          | 10/ 16/ 64    |
|--|-------|-------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 1 STATION 3   | G A B | CDAR COUNTS | V.       | ESTIMATED     |
| 2                                      | -     | 2           |          | NO./SQ. METER |
| CLADOCERA                              | -     | 7           | 0        |               |
|  |       | ۱ إ         | • !      |               |
| DAPHNIA                                | 27    | 37          | <b>4</b> |               |
| HOLOPEDIUM                             | ø     | ~           | ø        |               |
| ALL CLADOCERA                          |       |             |          | 937           |
| COPEPODA                               |       |             |          |               |
| CYCLOPS BICUSPIDATUS                   | 0     | 0           | -        |               |
| DIAPTOMUS                              | 6     | 7           | *        |               |
| ALL COPEPODA                           |       |             |          | 152           |
| TERRESTRIAL INSECT                     | 0     | -           | m        | 28            |
| DIPTERA<br>CHIRONOMIDAE                | 2     | 5           | 7        | 331           |
| PELECYPODA<br>Sphaeriidae<br>Sphaerium | -     | 0           | 0        | ~             |
| ALL PELECYPODA                         |       |             |          | 1             |
|  |       |             |          |               |

C

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | COUNT DATA   |           |             |       | 10/16/84  |
|---------------------------------------|--|-----------|-------------|-------|---|
| ST. CLAIR RIVER TRANSECT              | T 2 STATION 1  | œ         | GRAB COUNTS | STAIL | ESTIMATED   |
| TAXON                                 |  | -         | 7           | 6     | NO./SQ. METER   |
| CNIDARIA<br>HYDRA                     | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 1458      | 978         | 498   | 20205   |
| ALL CNIDARIA                          |  |           |             |       | 20205   |
| RHABDOCOELA                           |  | 36        | 0           | ī.    | 351   |
| TRICLADIDA                            |  | 6         | n           | 8     | 8   |
| NEMERTINEA                            |  | 0         | -           | 4     | 34  |
| NEMATODA                              |  | 11        | 0           | 35    | 358   |
| HIRUDINEA<br>ERPOBDELLIDAE            |  | -         | 0           | 8     |   |
| PISCICOLIDAE<br>Piscicola             |  | 0         | 0           | 7     |   |
| ALL HIRUDINEA                         |  |           |             |       | 34  |
| OLIGOCHAETA<br>Nais                   |  | 594       | 9           | 508   |   |
| SPIROSPERMA                           |  | 263       | 35          | 228   |   |
| STYLARIA                              |  | 36        | -           | 0     |   |
| OTHER<br>ALL DISSOURETA               |  | 1669 1329 | 1329        | 929   | 60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>6 |
| ALL OLIGOCIARIA                       |  |           |             |       |   |

.

|  |  | • |
|--|--|---|
|  |  |   |

| MACROZOUBENTHUS PONAR GRAB COUNT DATA                                  |            |             |                  | 10/16/84                                       |
|--|------------|-------------|------------------|--|
| TRANSECT 2 STATION 1 (CONT'D)  | į          | į           | !                |  |
| TAXON  | <b>4</b>   | GRAB COUNTS | STA<br>B         | ESTIMATED<br>NO./SQ. METER                     |
| CLADOCERA  | <br>       |             | 1                | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
| DAPHAIA  | 32         | 38          | -                |  |
| HOLOPEDIUM   | 0          | 4           | ო                |  |
| SIDA CRYSTALLINA   | 0          | <b>~</b>    | 0                |  |
| ALL CLADOCERA  |            |             |                  | 523  |
| COPEPODA   | (          | 9           | •                |  |
|  | >          | 9           | <b>30</b>        |  |
| EPISHURA LACUSTRIS   | 0          | •           | 0                |  |
| HARPACTICOIDA  | 9          | •           | 0                |  |
| ALL COPEPODA   |            |             |                  | 386  |
| OSTRACODA  | 6          | 58          | 9                | 289  |
| AMPHIPODA<br>Gammarus  | 22         | <b>98</b>   | 22               |  |
|  | -          | 5           | ო                |  |
| ALL AMPHIPODA  |            |             |                  | 592  |
| TERRESTRIAL INSECT   | <b>I</b> D | 6           | 0                | 10<br>10                                       |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALL DIPTERA | 0 10       | 0 9 0       | 4 <del>4</del> 4 | 3023<br>305.                                   |
|  |            |             |                  |  |

B-496

| 2 STATION 1 (CONT'D)  GRAB COUNTS 1 2 3  FERA  3 24 4  AAE  AAE  ABE  ABE  ABE  ABE  ABE  AB   | MACKUZDOBENTHOS PONAR GRAB COUNT DATA   |      |                  |           | 10/16/84                                |
|--|---|------|------------------|-----------|---|
| GRAB COUNTS  1 2 3 24 4  E 0 0 1  TERA  TERA  TERA  TERA  12 6 11  TERA  14 1 0 1  15 1 0 5  15 1 0 5  16 1 1  TERA  TER | ~                                       |      |                  |           |   |
| ### 12 6 11 ##################################   |   | - GR | 2<br>2<br>2<br>2 | UNTS<br>3 | ESTIMATED NO./SQ. METER                 |
| MEROPTERA  12 6 11  11A  11A  11A  11A  11A  11A  11A  | EPHEMEROPTERA<br>CAENIDAE<br>CAENIE     | (    |                  |           | 1 |
| HEROPTERA  11.4  1 | 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | n    | 24               | 4         |   |
| 12 6 11  14  15  16  17  18  18  18  19  19  19  19  19  19  19  | FEXAGENIA<br>FEXAGENIA                  | 0    | 0                | -         |   |
| 11.4.  | ALL EPHEMEROPTERA                       |      |                  |           | 220                                     |
| 11.4   | COLEOPTERA                              |      |                  |           |   |
| PTERA  HIDAE HIDAE HIDAE HIDAE HIDAE BSYCHE BSYCH BSYCHE BSYCH BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCH BSYCHE BSYCH BSYC | ELMIDAE                                 | ,    | •                | •         |   |
| PTERA  HIDAE HIDAE HIDAE HIDAE HIDAE HIDAE BSYCHE BSYCH BSYCHE BSYCH BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCHE BSYCH BSYCHE BSYCH BSY |   | 12   | •                | =         |   |
| HIDAE HIDAE HIDAE  CHE  CHE  CHE  OPODIDAE  A  OPTERA  1 1 0 5  154 72 105  0 0 1  0 0 1   | ALL COLEOPTERA                          |      |                  |           | 200                                     |
| HIDAE PSYCHE 9 8 5 CHE CHE 2 10 1 DAE A OPOTODAE A 1 1 0 5 CHE A 1 10 5 CHE A A CHE A A CHE A A A A A A A A A A A A A A A A A A A  | TRICHOPTERA                             |      |                  |           |   |
| PSYCHE  CHE  CHE  DAE  A  OPTERA  1 10 5  154 72 105  0 0 1  1 50 0  1 50 0  1 65 87 67  | HYDROPSYCHIDAE                          |      |                  |           |   |
| CHE DAE A DOPOUTDAE A DOPOUTDAE A DOPOUTDAE A T 1 0 5 T 10 | CHEUMATOPSYCHE                          | 6    | 0                | w         |   |
| DAE  DAE  OPPODIDAE  OPPODIDAE  DATA  OPTERA  1 10 5  154 72 105  0 0 1  0 0 1   |   |      |                  |           |   |
| DAE  A CODE  | まるなのでいること                               | 8    | 9                | -         |   |
| 10 0 0 1 1 1 0 0 1 1 1 1 0 0 1 1 1 1 0 0 1   | PHRYGANEIDAF                            |      |                  |           |   |
| 10PTERA 172 105 154 72 105 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | PHRYGANEA                               | 0    | C                | +         |   |
| 154 72 105 154 72 105 0 0 1 65 87 67   |   | •    | •                | •         |   |
| PSIS  20 8 17  10PTERA  1 10 5  154 72 105  2 0 0  0 0 1   | POLYCENTROPODIDAE                       |      |                  |           |   |
| 1 1 0 5 154 72 105 0 0 0 0 0 1 65 87 67  | NEURECL IPSIS                           | 50   | æ                | 11        |   |
| 1 1 0 1 1 0 5 1 1 154 72 105 2 0 0 0 0 1 65 87 67  | ALL TRICHOPTERA                         |      |                  |           | 572                                     |
| 154 72 105<br>2 0 0<br>0 0 1<br>65 87 67   | PLECOPTERA                              | -    | -                | 0         | 4                                       |
| 154 72 10<br>2 0<br>0 0<br>65 87 6   | ACARINA                                 | -    | 5                | IO.       | 110                                     |
| 154 72 10<br>2 0<br>0 0<br>65 87 6   | GASTROPODA                              |      |                  |           |   |
| 2 0<br>0 0<br>65 87 6  | AMNICOLA                                | 154  | 73               | 105       |   |
| 0  | FERISSIA                                | (4   | 0                | 0         |   |
| 65 65  |   |      | •                | •         |   |
| 65 87  | GYRAULUS                                | 0    | 0                | -         |   |
|  | PHYSA                                   | 65   | 87               | 67        |   |
|  | ***                                     | }    | ;                | ;         |   |
|  |   |      |                  |           |   |

• :

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |           |             | 10/16/84                                |
|---------------------------------------|-----------|-------------|---|
| TRANSECT 2 STATION 1 (CONT'D)         | į         |             |   |
| TAXON                                 | GRAB<br>1 | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER              |
| PELECYPODA                            |           |             | 1 |
| SPHAERIIDAE<br>PISIDIUM               | 21        | (C          | 90                                      |
|                                       | I         |             |   |
| ALL FELECTFOUR                        |           |             | 269                                     |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |                |                      |      | 10/16/84      |
|---------------------------------------|----------------|----------------------|------|---------------|
| ST. CLAIR RIVER TRANSECT 2 STATION 2  | Ş              | -                    |      |               |
|                                       | ž<br>–         | 6KAB CUUNIS<br>1 2 3 | 2 E  | NO./SQ. METER |
| FISH<br>ICHTHYOMYZON FOSSOR           | 0              | ~                    | 0    | 4-            |
| ALL FISH                              |                |                      |      | 7             |
| CNIDARIA<br>Hydra                     | 8585 4947 3923 | 4947                 | 3923 | 120207        |
| ALL CNIDARIA                          |                |                      |      | 120207        |
| RHABDOCOELA                           | 8              | -                    | -    | 28            |
| TRICLADIDA                            | 8              | Ø                    | -    | 18%           |
| NEMERT INEA                           | 8              | 42                   | 8    | 634           |
| NEMATODA                              | -              | 8                    | -    | 28            |
| HIRUDINEA<br>ERPOBOELLIDAE            | 4              | -                    | 0    |               |
| PISCICOLIDAE<br>PISCICOLA             | 0              | -                    | 0    |               |
| ALL HIRUDINEA                         |                |                      |      | 28            |

| TRANSECT 2 STATION 2 (CONT'D)  TRANSECT 2 STATION 2 (CONT'D)  TAXON  MAIS  SPIROSPERMA  AND STATION 2 (CONT'D)  AND STATION 2 (CONT'D)  SPIROSPERMA  ALL DIGGCHAETA  BOSMINA  BOSMINA  ALL CLADOCERA  BOSMINA  ALL CLADOCERA  BOSMINA  ALL CLADOCERA  BOSMINA  ALL CLADOCERA  CYCLOPS BICUSPIDATUS  EPISHURA LACUSTRIS  O MARANELLA  SOS  STRACODA  AND STATECA  ALL AMPHIPODA  AND STATECA  ALL AMPHIPODA  ASELLUS  ASE |  |      |              |          |   |
|--|--|------|--------------|----------|---|
| ### 49 0 0 0  ERMA   | 2 STATION 2  | ç    | 9            | 4        | 1<br>1<br>1<br>1  |
| ERMA  ERMA  49 0 0  6 11  A  1283 839 492  11  OCHAETA  OCHAETA  11  OCHAETA   |  |      | <b>8</b> 8 C | S E      | ESTIMATED NO./SQ. METER   |
| ERMA  A  A  A  A  A  A  A  A  A  A  A  A   | t<br>1<br>5<br>6<br>6<br>6<br>6<br>7<br>6<br>6<br>7<br>7 | 1    |              | ,        | :<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>:<br>: |
| ERMA  A  1   | 715  | 7    | >            | >        |   |
| ### 1283 839 492   1183 839 492   1183 839 492   1183 839 492   1184   1185   1 | SPIROSPERMA  | 50   | 50           | =        |   |
| BICUSPIDATUS  A LACUSTRIS  A AZTECA  1283 839 492  10M  0 0 8  87 50 57  16 0 0  16 1 0  17 19 0  1 0 2  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  | STYLARIA   | 16   | 0            | -        |   |
| BICUSPIDATUS  A LACUSTRIS  A AZTECA  1000  1283 839 492  100  97 50 57  16 0 0  17 19 0  1 0 2  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  |  |      | Š            | ,        |   |
| BICUSPIDATUS  BICUSPIDATUS  BICUSPIDATUS  BICUSPIDATUS  FODA  A LACUSTRIS  A AZTECA  1 0 0  1 0 0  1 0 0  1 0 0  | OTHER<br>ALL OLIGOCHAETA                                 | 1283 | 83.0         | 492      | 19221   |
| BICUSPIDATUS  BICUSPIDATUS  A LACUSTRIS  A AZTECA  1 0 0 41  0 0 41  0 0 41  0 0 41  1 0 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  | CLADOCERA  |      |              |          |   |
| BICUSPIDATUS  BICUSPIDATUS  A LACUSTRIS  A AZTECA  1 0 0 41  10 0 41  11 0 41  11 0 41  11 0 2   | BOSMINA  | 0    | 0            | <b>c</b> |   |
| BICUSPIDATUS  BICUSPIDATUS  BICUSPIDATUS  16 0 0 0 10 10 0 10 10 0 10 10 10 10 10 10   | DAPHNIA  | 97   | 20           | 57       |   |
| BICUSPIDATUS 16 0 0 41  BICUSPIDATUS 16 0 0  A LACUSTRIS 0 32 8  PODA 17 19 0  1 0 2  1 0 0  ODA   |  |      |              |          |   |
| BICUSPIDATUS 16 0 0 US 16 1 0 US 16 1 0 US 17 19 0 A AZTECA 1 0 2 IPODA 1 0 0  | HOLOPEDIUM   | 0    | 0            | 4        |   |
| BICUSPIDATUS 16 0 0  US  | ALL CLADOCERA  |      |              |          | 1742  |
| BICUSPIDATUS 16 0 0 US 16 1 0 US 2 8 A LACUSTRIS 0 32 8 PODA 17 19 0 1 0 2 IPODA 1 0 0   | COPEPODA   |      |              |          |   |
| 16 1 0  A LACUSTRIS 0 32 8  PODA 17 19 0  A AZTECA 1 0 2  IPODA 1 0 0  | CYCLOPS BICUSPIDATUS                                     | 16   | 0            | 0        |   |
| A LACUSTRIS 0 32 8 PODA 17 19 0 A AZTECA 1 0 2 IPODA 1 0 0   | DIAPTOMUS  | 16   | -            | 0        |   |
| PODA<br>17 19 0<br>69 22 23<br>A AZTECA<br>1 0 2<br>1 0 0<br>0 0   | EPISHURA LACUSTRIS                                       | 0    | 32           | •        |   |
| S 69 22 23 A AZTECA 1 0 2 IPODA 1 0 0  | ALL COPEDODA   |      |              |          | 503   |
| S 69 22 23 A AZTECA 1 0 2 IPODA 1 0 0  | OSTRACODA  | 11   | 19           | 0        | 248   |
| S 69 22 23   | AMPHIPODA  |      |              |          |   |
| LLA AZTECA 1 0 2 LLA AZTECA 1 0 2 PHIPODA 1 0 0  | GAMMARUS   | 69   | 33           | 23       |   |
| PHIPODA US 1 0 0   | HYALELLA AZTECA  | -    | 0            | 8        |   |
| US 1 0 0   | ALL AMPHIPODA  |      |              |          | 806   |
|  | ISOPODA  | -    | c            | c        |   |
| ALL ISOPODA 7  |  | •    | •            | >        | •   |
|  | ALL ISOPODA  |      |              |          | 7   |

| 2 STATION 2 (CONT'D)  GRAB COUNTS ESTIMAT  L INSECT  3 0 0 21  2 3 NO./SO.  2 1  AE  RA  A  A  A  A  A  A  A  A  A  A  A  A  | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |          |                  |     | 10/16/84                |
|--|---|----------|------------------|-----|-------------------------|
| ### COUNTS ESTIMATED FOR THE COUNTS        | STATION 2                               |          | į                |     |                         |
| 3 0 0<br>1 6 47<br>1 0 1 1 2<br>1 1 0 1 1 2<br>21 2 22 2<br>13 1 25<br>6 1 9   | 2                                       | GRA<br>1 | 8<br>2<br>2<br>3 | S E | ESTIMATED NO./SQ. METER |
| ### ### ### ### ### ### ### ### ### ##   | TERRESTRIAL INSECT                      | 9        | 0                | 0   | 21                      |
| ### ### ### ### #### #### ############   | DIPTERA                                 |          |                  |     |                         |
| ERA ERA  A  A  ERA  A  ERA  A  ERA  A  A  A  A  A  A  A  A  A  A  A  A   | CHIRONOMIDAE                            | £ (      | 62               | 47  | 1102                    |
| ERA ERA ERA  A  A  A  A  EROPTERA  A  TRIDAE  NTRUS  CHE  CHE  CHE  CHE  CHA  CHA  CHA  CHA  | PSYCHODIDAE                             | <b>-</b> | <b>&gt;</b> -    |     |                         |
| ######################################   | ALL DIPTERA                             |          |                  |     | 1129                    |
| AE  A  IDAE  A  EROPTERA  A  TRIDAE  NTRUS  CHE  COPODIDAE  B  A  TRIDAE  TRID       | EPHEMEROPTERA                           |          |                  |     |                         |
| AE  A  IDAE  A  EROPTERA  A  TRIDAE  NTRUS  CHE  CHE  PSIS  A  1 0 1  1 0 1  1 1 0  1 1 0  1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 0  1 1 1 1   | CAENIDAE                                | Ā        | -                | c   |                         |
| AF<br>1 0 1<br>1 0 1<br>EROPTERA  PTERA  A RA  RA  TRIDAE  NTRUS  CHE  CHE  1 0 1  1 0 1  1 1 0  1 1 0  1 1 25  CHE  CHE  PSYCHE  CHE  PSYCHE  PSYCH |   | 2        | •                | •   |                         |
| A EROPTERA 1 0 1  LA 1 0 1  EROPTERA 1 0 1  TRIDAE 0 0 0       | ÉPHEMERIDAE                             |          |                  |     |                         |
| IDAE  A EROPTERA  TRIDAE  NTRUS  CHE  TO 1 1 0 1 1 1 0 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1   | HEXAGENIA                               | 0        | 0                | 8   |                         |
| EROPTERA  FROPTERA  PTERA  A RA  TRIDAE  NTRUS  CHE  CHE  PSYCHE  PSYC       | HEDTAGENTOAR                            |          |                  |     |                         |
| EROPTERA  I.A  | STENONEMA                               | -        | 0                | -   |                         |
| EROPTERA  1.4  PTERA  A  RA  TRIDAE  NTRUS  NTRUS  CHE  CHE  PSYCHE  CHE  PSIS  GPODIDAE  FROM 1 25  CHE  PSIS  GROUP 1 1 25  CHE  TRIDAE  OPDIDAE  FROM 1 25  CHE  TRIDAE  OPDIDAE  FROM 1 1 25  CHE  TRIDAE  TRIDAE  FROM 1 1 25  CHE  TRIDAE  TRID       | 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |          |                  |     |                         |
| A A A A A A A A A A A A A A A A A A A  | ALL EPHEMEROPTERA                       |          |                  |     | 158                     |
| A TERA 0 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 0 1   | COLEOPTERA                              |          |                  |     |                         |
| TERA TERA TERA  A 0 0 1 RIDAE TO 0 0 1 TO 0 2 TO 0 2 TO 0 2 TO 0 2 TO 0 1 TO 0 0 1 T       | ELMIDAE                                 | •        | •                |     |                         |
| A RIDAE 0 0 1 RIDAE 0 0 1 TENA 2 22 SYCHE 21 2 22 SYCHE 21 2 22 HE 13 1 25 HE 19 SIS 6 1 9   | DUBIKAPHIA                              | -        | -                | 0   |                         |
| A RIDAE TRUS TRUS TRUS TRUS SYCHE SYCHE 13 1 25 HE PODIDAE SIS 6 1 9   | ALL COLEOPTERA                          |          |                  |     | 14                      |
| 0 0 1<br>0 0 2<br>21 2 22<br>13 1 25<br>6 1 9  | TRICHOPTERA                             |          |                  |     |                         |
| 0 0 2 21 2 22 13 1 25 6 1 9  | TRICHOPTERA                             | 0        | 0                | -   |                         |
| 0 0 2<br>21 2 22<br>13 1 25<br>6 1 9   | BRACHYCENTRIDAE                         |          |                  |     |                         |
| 21 2 22<br>13 1 25<br>6 1 9  | BRACHYCENTRUS                           | 0        | 0                | 8   |                         |
| 21 2 22<br>13 1 25<br>6 1 9  |   |          |                  |     |                         |
| 13 1 25 12 6 1 9   | HYDROPSYCHIDAE                          | ;        | •                | į   |                         |
| 13 1 25  |   | 5        |                  | 7.7 | •                       |
| 5 G  | HYDROPSYCHE                             | 13       | -                | 25  |                         |
| σ,<br>   |   | <b>)</b> | •                | )   |                         |
| on   | POLYCENTROPODIDAE                       |          |                  |     |                         |
|  | NEURECLIPSIS                            | 9        | -                | o   |                         |
|  | 3 f l l l l l l l l l l l l l l l l l l |          |                  |     |                         |

| MACROZDOBENTHOS PONAR GRAB COUNT DATA   |          |             |              | 10/16/84      | /84   |
|---|----------|-------------|--------------|---------------|-------|
| TRANSECT 2 STATION 2 (CONT'D)           |          |             |              |               |       |
|   | <u> </u> | GRAB COUNTS | NTS          | ESTIMATED     | reo   |
| TAXON                                   | -        | 8           | ro           | NO./SQ. METER | METER |
| ACARINA                                 | ٥        | ٥           | 4            | 28            |       |
| GASTROPODA                              |          |             |              |               |       |
| AMNICOLA                                | 50       | <b>58</b>   | <del>0</del> |               |       |
| ELIMIA LIVESCENS                        | -        | 5           | 5            |               |       |
| FERISSIA                                | 137      | 64          | 46           |               |       |
| F 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |          |             |              |               |       |
| GYRAULUS                                | -        | 0           | 0            |               |       |
| PHYSA                                   | 36       | =           | -            |               |       |
| ALL GASTROPODA                          |          |             |              | 2851          |       |
| PELECYPODA<br>Sphafrinae                |          |             |              |               |       |
| PISIDIUM                                | 6        | 2           | 11           | 282           |       |
|   |          |             |              |               |       |
| ALL PELECYPODA                          |          |             |              | 282           |       |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA | IAR GRAB COL | INT DATA                        |                 |          |      | 10/16/84      | /84         |
|---------------------------------------|--------------|---------------------------------|-----------------|----------|------|---------------|-------------|
| ST. CLAIR RIVER                       | TRANSECT 2   | 2 STATION                       | 8               | Š        | 5    |               | 2           |
| TAXON                                 |              |                                 | ž –             | 1 2 3    | n en | NO./SQ. METER | METER       |
| CNIDARIA<br>HYDRA                     | <br>         | 1<br>1<br>1<br>1<br>1<br>1<br>1 | 1870610966 5804 | 9960     | 5804 | 244311        | !<br>!<br>! |
| ALL CNIDARIA                          |              |                                 |                 |          |      | 244311        |             |
| RHABDOCDELA                           |              |                                 | 161             | -        | €    | 1171          |             |
| TRICLADIDA                            |              |                                 | -               | 7        | 5    | 124           |             |
| NEMERTINEA                            |              |                                 | 495             | 20       | 27   | 4153          |             |
| NEMATODA                              |              |                                 | 0               | 0        | -    | 7             |             |
| OLIGOCHAETA<br>Spirosperma            |              |                                 | φ               | 5        | -    |               |             |
| OTHER<br>ALL DLIGOCHAETA              |              |                                 | 389             | 36       | 9    | 3195          |             |
| CLADOCERA<br>BOSMINA                  |              |                                 | 96              | <u>+</u> | 11   |               |             |
| DAPHNIA                               |              |                                 | 160             | 146      | 9    |               |             |
| HOLOPEDIUM                            |              |                                 | 0               | 0        | 16   |               |             |
| ALL CLADOCERA                         |              |                                 |                 |          |      | 4118          |             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |          |             | 10/16/84                                |
|---------------------------------------|------------|----------|-------------|---|
| TRANSECT 2 STATION 3 (CONT'D)         | ę          | Š        |             | 2                                       |
| TAXON                                 | <b>5</b> - |          | 2<br>2<br>2 | NO./SQ. METER                           |
| S                                     | 0          | -        | ø           | f 0 0 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 |
| DIAPTOMUS                             | 192        | 5        | 9           |   |
| 1                                     | 64         | 0        | 0           |   |
| ALL COPEPODA                          |            |          |             | 2283                                    |
| AMPHIPODA<br>GAMMARUS                 | e          | æ        | 4           |   |
| HYALELL A AZTECA                      |            | , (      |             |   |
| ALL AMPHIPODA                         | •          | •        | •           | 124                                     |
| DIPTERA                               |            |          |             |   |
| CHIRONOMIDAE                          | <u>.</u>   | - 0      | <b>-</b> ç  | 103                                     |
| ALL DIPTERA                           | •          | >        | <u>5</u> .  | 193                                     |
| EPHEMEROPTERA                         |            |          |             |   |
| CAENIDAE<br>Caenis                    | 8          | -        | -           |   |
| EPHEMERIDAE                           |            |          |             |   |
| HEXAGENIA                             | 8          | 0        | -           |   |
| HEPTAGENIDAE                          |            |          |             |   |
| STENONEMA                             | ო          | <b>*</b> | ₹           |   |
| ALL EPHEMEROPTERA                     |            |          |             | 193                                     |
| COLEOPTERA                            |            |          |             |   |
| ELWIDAE<br>Dubiraphia                 | -          | ~        | c           |   |
|                                       | •          | •        | ,           |   |
| ALL COLEOPTERA                        |            |          |             | 21                                      |
| LEPIDOPTERA                           | -          | 0        | 0           | 7                                       |
|                                       |            |          |             |   |

T

| AVTRIDAE ENTRUS CHIDAE CHIDAE CHIDAE ILA COPTERA COPCENS TVESCENS  | TRANSECT 2 STATION 3 (CONT'D)  |                |        |           |          |
|--|--|----------------|--------|-----------|----------|
| TRIDAE INTRUS IN |  | 8 <del>-</del> | AB COI | UNTS<br>3 |          |
| MYRIDAE  NYTRIDAE  NYTRIDAE  NYTRIDAE  T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | TRICHOPTERA  |                |        |           |          |
| AE  ENTIDAE  T 1 1  T 1 | BRACHYCENTRIDAE  |                |        |           |          |
| CHEDAE  CHEDAE  CHE  COMMITTEE  COMMITTEE  CHE  BOO 60 17  BOODDIDAE  COMMITTEE  BOO 60 17  BOODDIDAE  COMMITTEE  COMMITT | BRACHYCENTRUS  | 7              | -      | -         |          |
| 108 172 32 108 172 32 108 172 32 109 172 32 10 |  |                |        |           |          |
| CHE  COMPOSITION  1  | CHEIMATORACOLE   | 9              |        | ;         |          |
| ## ## ## ## ## ## ## ## ## ## ## ## ##   |  | 20             | 7.75   | 32        |          |
| OPCDA  OP | HYDROPSYCHE  | Š              | Ç      |           |          |
| OPCDA AE  ERILDAE  PSIS  2 2 0  1 10 4  2 4 23 40  1 1 0  1 1 9  OPCDA  ERILDAE  OPCDA  2 5 6  1 1 0  1 1 9  |  | 3              | 3      | :         |          |
| 1LIDAE 11.1DAE | POLYCENTROPODIDAE  |                |        |           |          |
| 11. IDAE   | NEURECL IPSIS  | 8              | 8      | 0         |          |
| 1LA  OPTERA  OPTERA  OPTERA  OPTERA  OPCDA  ERIIDAE  | 1 1 6 7 1 1 2 2 1 4 2 1  | 1              | 1      | •         |          |
| 1LA 10PTERA 10PTERA 10PTERA 10PTERA 11PESCENS  | RHYACOPHILIDAE   |                |        |           |          |
| OPCDA  ERIIDAE  OPCDA  OPTERA  | PROTOPTILA   | 44             | 6      | Ç         |          |
| OPCDA  M  10 1 0  1 0 1 0  1 1 0  1 1 9  OPCDA  ERILDAE  |  | ;              | 2      | }         |          |
| 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1  | ALL TRICHOPTERA  |                |        |           | 4125     |
| IVESCENS  1  |  | (              |        | ,         | <b>.</b> |
| TVESCENS 2 55 6  TVESCENS 42 51 23  1 1 0  0PCDA  M 1 1 0  ERIIDAE   |  | 0              | -      | 0         | 7        |
| 1 1 2 5 6  IVESCENS 42 51 23  1 1 0 2 6 0  1 1 9  OPCDA  M  FRIIDAE  | GASTROPODA   |                |        |           |          |
| AE FILDAE  | AMNICOLA   | 7              | ស      | 9         |          |
| AE FILDAE  |  |                |        |           |          |
| 1 1 0<br>1 1 9<br>OPCDA  AE  AE  AE  BRIDAE  | ELIMIA LIVESCENS   | 42             | 5      | 23        |          |
| OPCDA  OPCDA  AE  AE  BM  1 1 9  1 1 9  1 1 9  1 1 0  ERIIDAE  |  | •              | •      | (         |          |
| 2 6 0<br>1 1 9<br>0PGDA<br>AE<br>3 7 1<br>ERIIDAE  |  | -              | -      | •         |          |
| OPCDA  AE  AE  AE  AE  AE  AE  AE  AE  AE  | LYMNAEA  | 8              | g      | 0         |          |
| OPCDA  OPCDA  AE  AE  AE  AE  AE  AE  AE  AE  AE   |  |                |        |           |          |
| OPCDA  AE  3 7 1  M 1 0  ERIIDAE   | ACTION IN THE PERSON IN THE PE | -              | -      | o,        |          |
| AE 3 7 1 1 M 1 0 ERIIDAE   | ALL GASTROPODA   |                |        |           | 1033     |
| SPIIDAE  | PELECYPODA   |                |        |           |          |
| 3 7 1  | SPHAERIIDAE  |                |        |           |          |
| AERIUM 1 1 0   | PISIDIUM   | ო              | 7      | -         |          |
| SPHAERIIDAE  | SPHARRIUM  | •              | •      | c         |          |
| SPHAERIDAE   |  | •              | -      | >         |          |
|  |  |                |        |           | 8        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |      |             |      | 10/16/84     |
|--|------|-------------|------|--------------|
| ST. CLAIR RIVER TRANSECT 3 STATION 1 TAXON | . 68 | GRAB COUNTS | UNTS | ESTIMATED    |
| CNIDARIA                                   | .    | ·           | ,    |              |
| HYDRA                                      | 427  | <b>=</b>    | 23   | 3175         |
| ALL CNIDARIA                               |      |             |      | 3175         |
| NEMERTINEA                                 | 0    | 0           | •    | ۲            |
| NEMATODA                                   | 0    | 0           | 8    | <del>1</del> |
| OLIGOCHAETA<br>Nais                        | -    | 0           | 0    |              |
| OTHER<br>ALL OLIGOCHAETA                   | 6    | <b>≅</b>    | 4    | 179          |
| CLADOCERA<br>BOSMINA                       | ø    | 4           | -    |              |
| DAPHNIA                                    | 1    | £           | 5    |              |
| HOLOPEDIUM                                 | 4    | 5           | m    |              |
| ALL CLADGERA                               |      |             |      | 489          |
|  | 4    | In.         | 0    |              |
| DIAPTOMUS                                  | =    | Ē           | ın   |              |
| EPISHURA LACUSTRIS                         | -    | -           | -    |              |
| ALL COPEPODA                               |      |             |      | 303          |
| AMPHIPODA<br>Gammarus                      | -    | 0           | 0    | ,            |
| ALL AMPHIPODA                              |      |             |      |              |

| GRAB COUNTS  OMIDAE  DAE  PTERA  TERA  SYCHIDAE  ATOPSYCHE  ERIDAE  ERIDAE  ERA  NOTDES  ODA  ODA  ODA  ODA  ODA  ODA  ODA  OD   | TRANSECT 3 STATION 1 (CONT'D) |      |            |     |               |
|--|-------------------------------|------|------------|-----|---------------|
| DAE RA HIDAE RA HIDAE PSYCHE CHE CHE CHE CHE CHE CHE CHE CHE CHE   |                               | GRAE | S COU      | NTS | ESTIMATED     |
| DAE DAE DAE 1 0 2 2 8 1  | TAXON                         | -    | 7          | က   | NO./SQ. METER |
| DES.  PARE  A A A A A A A A A A A A A A A A A A A  | DIPTERA                       | ·    |            |     |               |
| A HIDAE HIDAE HIDAE HIDAE HIDAE HIDAE  CHE CHE CHE CHE CHE CHE CHE CHE CHE C   | CHIRONOMIDAE                  | φ •  | <b>8</b> 6 | 78  | . 496         |
| HIDAE PSYCHE CHE CHE CHE CHE CHE CHE CHE CHE CHE   | EMPIDIDAE<br>All Diptera      | -    | 5          | 7   | 516           |
| HIDAE PSYCHE THE THE THE THE THE THE THE THE THE T   | TRICHOPTERA                   |      |            |     |               |
| CHE CHE DAE DAE DAE OPTERA OPT | HYDROPSYCHIDAE                |      | c          | c   |               |
| CHE DAE DAE DAE DES PTERA  |                               | •    | >          | >   |               |
| DES 0 1 0 0 1 0 1 ERA 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0  | HYDROPSYCHE                   | 4    | -          | 8   |               |
| DES 0 1 0 1 0 1 PTERA 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1  |                               |      |            |     |               |
| OPTERA DES PTERA 1 0 1 1 0 1 1 0 0   | CERACLEA                      | 0    | -          | 0   |               |
| DES. PTERA  1 0 1  1 0 0  1 0 0  1 0 0   | ALL TRICHOPTERA               |      |            |     | 131           |
| PTERA 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0  | DI ECODITEDA                  |      |            |     |               |
| PTERA 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0  | ISOGENOIDES                   | 0    | 0          | -   | 7             |
| - 0 0 - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |                               |      |            |     | •             |
| - 0 0  | ALL PLECUPIERA                |      |            |     | •             |
| 0 - 0  | ACARINA                       | -    | 0          | -   | <b>‡</b>      |
| 0 + 0  | GASTROPODA                    |      |            |     |               |
| •  | AMNICOLA                      | -    | 0          | 0   |               |
| 145644444444444444444444444444444444444  | PHYSA                         | 0    | -          | 0   |               |
|  |                               |      |            |     | •             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |             |          | 10/16/84      |
|---|-----|-------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 3 STATION 2    |     | GRAB COUNTS | MTS      | ESTIMATED     |
| TAXON                                   | -   | 7           | 6        | NO./SQ. METER |
| CNIDARIA<br>HYDRA                       | 231 | 5           | <b>4</b> | 2107          |
| ALL CNIDARIA                            |     |             |          | 2107          |
| NEMERTINEA                              | 6   | -           | 0        | 28            |
| NEMATODA                                | 8   | -           | 0        | 21            |
| OL IGOCHAETA<br>STYLARIA                | 8   | 0           | 0        |               |
| OTHER<br>ALL OLIGOCHAETA                | 4   | Ø           | -        | 110           |
| POLYCHAETA MANAYUMKIA SPECIOSA          | -   | 0           | 0        |               |
| 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 |     |             |          |               |
| CLAUCCERA                               | 4   | 1           | 7        |               |
| DAPHNIA                                 | 5   | 7           | -        |               |
| HOLOPEDIUM                              | -   | n           | 7        |               |
| ALL CLADOCERA                           |     |             |          | 324.          |
| COPEPUDA<br>CYCLOPS BICUSPIDATUS        | ^   | 0           | 8        |               |
| DIAPTOMUS                               | 5   | 13          | ø        |               |
| EPISHURA LACUSTRIS                      | ٥   | -           | 0        |               |
| ALL COPEPODA                            |     |             |          | 310           |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |          | 10/16/84      |
|---------------------------------------|------------|-------------|----------|---------------|
| TRANSECT 3 STATION 2 (CONT'D)         | GRAB       | GRAB COUNTS | NTS      | ESTIMATED     |
| TAXON                                 | -          | 2           | 6        | NO./SQ. METER |
| TERRESTRIAL INSECT                    | -          | 0           | 0        | 4             |
| DIPTERA                               | 9          | 3           | ر<br>۾   | a             |
| EMPIDIDAE                             | <u>.</u> 0 | ; -         | <u>,</u> |               |
| ALL DIPTERA                           |            |             |          | 682           |
| EPHEMEROPTERA<br>Hedtasentidae        |            |             |          |               |
| STENDEN                               | -          | 0           | 0        |               |
| ALL EPHEMEROPTERA                     |            |             |          | ,             |
| TRICHOPTERA                           |            |             |          |               |
| CHEUMATOPSYCHE                        | -          | 0           | 0        |               |
| HYDROPSYCHE                           | ო          | 0           | 0        |               |
| LEPTOCERIDAE                          |            |             |          |               |
| CERACLEA                              | 0          | 0           | ო        |               |
| ALL TRICHOPTERA                       |            |             |          | 8             |
| PLECOPTERA                            |            |             |          |               |
| ISOGENOIDES                           | 0          | 7           | 0        | <del>+</del>  |
| ALL PLECOPTERA                        |            |             |          | 4             |
| ACARINA                               | -          | c           | 0        | 7             |

|                                      |     |             |     | 10/16/84      |
|--------------------------------------|-----|-------------|-----|---------------|
| ST. CLAIR RIVER TRANSECT 3 STATION 3 | GRA | GRAB COUNTS | STA | ESTIMATED     |
| TAXON                                | - ! | 7           | 6   | NO./SQ. METER |
| CNIDARIA<br>Hydra                    | Ξ   | 34          | 24  | 475           |
| ALL CNIDARIA                         |     |             |     | 475           |
| NEMERTINEA                           | 0   | 0           | 8   | 4             |
| NEMATODA                             | 8   | 0           | -   | 21            |
| OLIGOCHAETA<br>Spirosperma           | 0   | 0           | -   |               |
| STYLARIA                             | 0   | -           | 0   |               |
| OTHER<br>ALL OLIGOCHAETA             | 8   | ស           | 5   | 152           |
| MANAYUNKIA SPECIOSA                  | 0   | -           | 0   | 7             |
| ALL POLYCHAETA                       |     |             |     | 1             |
| CLADOCERA<br>BOSMINA                 | •   | ø           | 00  |               |
| DAPHNIA                              | ø   | Ξ           | 11  |               |
| HOLOPEDIUM                           | ø   | 4           | ø   |               |
| ALL CLADGERA                         |     |             |     | 427           |

(

| TRANSECT 3 STATION 3 (CONT'D)  TAXON  TAXON  COPEDODA  CYCLOPS BICUSPIDATUS  DIAPTONUS  EPISHURA LACUSTRIS  O 0 1 0 17  TOBER CANADA  ANHIPODA  ANHIPODA  ANHIPODA  ALL COPENDA  ANHIPODA  | MACROZGOBENTHOS PONAR GRAB COUNT DATA |      |           |                | 10/16/84  |
|--|---------------------------------------|------|-----------|----------------|---|
| BICUSPIDATUS  S  LACUSTRIS  ODA  ERA  A  ERA  ODA  OPTERA  OPT | 3 STATION 3                           | 8400 | Ŝ         | MY             | CATAMITES   |
| BICUSPIDATUS  S  LACUSTRIS  OPS  ODA  DAE  ERA  A  ERA  OPTERA  OPTERA | TAXON                                 | -    | 3 ~       | n m            | NO./SQ. METER   |
| S  | S                                     | ٥    | 4         | ٥              | 0<br>6<br>6<br>6<br>6<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| LACUSTRIS  LACUSTRIS  ODA  DAE  ODA  RA  ERA  A  ERA  OPTERA   | DIAPTOMUS                             | 7    | σ         | 9              |   |
| LACUSTRIS  LACUSTRIS  OPS  |                                       |      | •         | )              |   |
| DPS  | EPISHURA LACUSTRIS                    | 0    | ~         | -              |   |
| DAE  DAE  DAE  DAE  BRA  BRA  BRA  BRA  CHE  CHE  DAE  OPTERA  | MESOCYCLOPS                           | 0    | 0         | -              |   |
| DAE  DAE  BAE  RA  ERA  CO 1 0  CO 2 0  CO 2 0  CO 1 0  A  A  A  A  A  A  A  A  A  A  A  A  A  | ALL COPEPODA                          |      |           |                | 275   |
| PODA  DAE  BAE  BAE  BAE  BAE  BAE  BAE  B   | AMPHIPODA                             | ,    |           | ,              |   |
| DAE  DAE  BA  ERA  ERA  A  ERA  A  HIDAE  OPTERA  OPTE | GAMMARUS                              | 0    | -         | 0              | 7   |
| ERA  ERA  ERA  O 1 0  A A  EROPTERA  HIDAE  OPTERA  OPTERA  OPTERA   | ALL AMPHIPODA                         |      |           |                | 1   |
| ERA  ERA  ERA  O 1 0  AE  EROPTERA  AIDAE  OPTERA  OPT | DIPTERA                               |      |           |                |   |
| ERA ERA  AE  AOPTERA  OPTERA   | CHIRONOMIDAE                          | 53   | 23        | <del>6</del> 0 | 1274  |
| ### OPTERA O 1 0 1 0 1 0   | ALL DIPTERA                           | 5    | N         | >              | 1288  |
| AE EROPTERA HIDAE C DAE OPTERA OPTERA OPTERA OPTERA  | EPHEMEROPTERA                         |      |           |                |   |
| AE   | CAENIDAE                              | 0    | -         | 0              |   |
| EROPTERA HIDAE HIDAE HIDAE HIDAE OPTERA OPTERA OPTODA  | EPHEMERIOAE<br>LEYAGENIA              | c    | •         | Ć              |   |
| A HIDAE HIDAE CHE CHE CHE CHE OPTERA OPTERA OPTODA   |                                       | >    | -         | >              | ;   |
| HIDAE HIDAE CHE CHE CHE DAE  1 0 1 OPTERA OPTERA OPTODA  | ALL EPHEMEROPTERA                     |      |           |                | 7   |
| DAE  1 0 1  0 1  0 1  0 1  0 0  0 1  0 8  0 1  0 0  1 0  | TRICHOPTERA                           |      |           |                |   |
| DAE 1 0 1 0 1 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0  | HYDROPSYCHE                           | 0    | -         | 0              |   |
| 1 0 1 0 0PTERA 0 88 0 0 1 0 0 1 0  | FPTOCEOTOAE                           |      |           |                |   |
| OPTERA  O 88 O  O 1 O  | CERACLEA                              | -    | 0         | -              |   |
| 0 88 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0   | ALL TRICHOPTERA                       |      |           |                | 24  |
| 0 0<br># <del>-</del>  | GASTROPODA                            | •    | (         | •              |   |
| 0 - 0  | AMAZOLA                               | 0    | <b>10</b> | 0              |   |
|  | PHYSA                                 | 0    | -         | 0              |   |
|  | ALL GASTROPODA                        |      |           |                | 62  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |                  |             | 10/16/84      |
|---------------------------------------|------------------|-------------|---------------|
| TRANSECT 3 STATION 3 (CONT'D)         | GRAB             | GRAB COUNTS | ESTIMATED     |
| TAXON                                 | -                | 1 2 3       | NO./SQ. METER |
| PELECYPODA                            | ;<br>;<br>;<br>; | <br>        |               |
| SPHAERI IDAE<br>PISIDIUM              | 0                | 0 00        | 69            |
|                                       |                  |             |               |
| ALL PELECYPODA                        |                  |             | 69            |

B-5 11

| MACROZOOBENTHOS PO         | MACROZODBENTHOS PONAR GRAB COUNT DATA |            |     |          | 10/11/84      |
|----------------------------|---------------------------------------|------------|-----|----------|---------------|
| ST. CLAIR RIVER            | TRANSECT 4 STATION 1                  | - 6        |     | O E I MI | 444           |
| TAXON                      |                                       | <b>5</b> – | 2 6 |          | NO./SO. METER |
| CNIDARIA                   |                                       | 229        | 329 | 848      | 9683          |
| ALL CNIDARIA               |                                       |            |     |          | 9683          |
| RHABDOCOELA                |                                       | -          | 6   | -        | 34            |
| TRICLADIDA                 |                                       | 7          | -   | ø        | 62            |
| NEMERTINEA                 |                                       | 26         | 2   | 66       | 964           |
| NEMATODA                   |                                       | 25         | 114 | 7        | 97.1          |
| HIRUDINEA<br>ERPOBDELLIDAE |                                       | 0          | 0   | -        | 7             |
| OL IGOCHAETA<br>Nais       |                                       | 555        | 170 | 562      |               |
| SPIROSPERMA                |                                       | 202        | 198 | 142      |               |
| STYLARIA                   |                                       | 82         | 72  | 360      |               |
| OTHER<br>ALL OLIGOCHAETA   |                                       | 284        | 175 | 452      | 22409         |
|                            |                                       |            |     |          |               |

| A STATION 1  CERCUS  CERCUS  DIUM  DOCERA  TICOIDA  TICOI |   |     |       |          | •         |
|--|---|-----|-------|----------|-----------|
| ERCUS  1   | TRANSECT 4 STATION 1 (CONT'D)           | Š   | AB CO | UNTS     | ESTIMATED |
| ERCUS  IUM  OCERA  OCERA  OCERA  OCERA  OCERA  ICOIDA  DODA  A AZTECA  A AZTECA  A AZTECA  O 16 0 18  O 1 | TAXON                                   | -   | 7     | 0        |           |
| CERCUS  CERCUS  CERCUS  CERCUS  1 0 0  53 3  CERCUS  DOCERA  MUS  A  A  A  A  A  A  A  A  A  A  A  A  A  | CLADOCERA                               |     |       |          | <br>      |
| CERCUS  CERCUS  1 0 0  DOCERA  DOCERA  MUS  MUS  TICOIDA  EPODA  A  A  A  A  A  A  A  A  A  A  A  A  | 1111111                                 | >   | 2     |          |           |
| DICCERA  DOCERA  MUS  FPODA  A  A  A  A  A  A  A  A  A  A  A  A  | CAMPTOCERCUS                            | -   | 0     | 0        |           |
| MUS<br>MUS<br>TICOIDA<br>EPODA<br>A<br>EPODA<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>B<br>A<br>B<br>A<br>B<br>A<br>B<br>A<br>B<br>A<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B   | HOLOPEDIUM                              | 16  | 0     | 0        |           |
| MUS TICOIDA EPODA EPODA A A A A A A A A A A A A A A A A A B A A A B B A B A B B A B  | ALL CLADGERA                            |     |       |          | 365       |
| MUS<br>TICOIDA<br>EPODA<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>A<br>B<br>A<br>B<br>A<br>B<br>A<br>B<br>A<br>B<br>A<br>B<br>A<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B<br>B  | COPEDIDA                                |     |       |          |           |
| TECA   | DIAPTOMUS                               | 0   | 16    | 0        |           |
| TECA 6 10 14  TECA 6 10 14  A 7  | HARPACTICOIDA                           | 0   | ٥     | 18       |           |
| TECA 6 10 14  6 10 14  7 169  6 10 14    | ALL COPEPODA                            |     |       |          | 234       |
| TECA 6 10 14  A  255 207 169 2 0 0  . 61 97 43  E 1 0 2  | OSTRACODA                               | 29  | 38    | 49       | 298       |
| TECA 6 10 14  A  255 207 169 2 0 0   | AMPHIPODA                               |     |       |          |           |
| TECA  A  A  255 207 169 2 0 0  | GAMMARUS                                | 301 | 252   | 480      |           |
| 255 207 169<br>2 0 0<br>61 97 43<br>80 184 104   | HYALELLA AZTECA                         | Ø   | ð     | 4        |           |
| 255 207 169<br>2 0 0<br>61 97 43<br>80 184 104   | ALL AMPHIPODA                           |     |       |          | 7321      |
| 255 207 169<br>2 0 0<br>   | DIPTERA                                 |     |       |          |           |
| 61 97 43<br>80 184 104<br>1 0 2  | CHIRONOMIDAE                            | 255 | 207   | 169      | 4345      |
| 61 97 43<br>80 184 104<br>1 0 2  | EMPIDIDAE<br>ALL DIPTERA                | ~   | 0     | 0        | 4359      |
| NIS<br>NIS<br>MERIDAE<br>MERIDAE<br>AGENIDAE<br>NONEMA  1 0 2  | EPHEMEROPTERA                           |     |       |          |           |
| MERIDAE  MAGENIA  AGENIIDAE  1 0 2   | CAENIDAE<br>CAENIS                      | 6   | 18    | <b>4</b> |           |
| AGENIA 80 184 104 AGENIDAE 100 1 0 2   |   |     |       |          |           |
| AGENIDAE 1 0 2   | HEXAGENIA                               | 80  | 184   | 104      |           |
| NONEMA   | HEDTACENTOAE                            |     |       |          | •         |
|  | STENDNEMA                               | -   | 0     | 8        |           |
|  | 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |       |          |           |

| TRANSECT 4 STATION 1 (CONT'D)                   | T Q | STMIND BAGS  | O LN  | ESTIMATED     |
|---|-----|--------------|-------|---------------|
| TAXON   | - i | 8            | 9 (9) | NO./SO. METER |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | -   | •            | 7     |               |
| LEPTOCERIDAE<br>CERACLEA                        | 0   | ٥            | -     |               |
| MYSTACIDES                                      | 0   | 9            | 0     |               |
| ALL TRICHOPTERA                                 |     |              |       | 138           |
| ACARINA   | 0   | 33           | -     | 303           |
| GASTROPODA<br>Amnicola                          | 65  | <del>.</del> | 56    |               |
| ELIMIA LIVESCENS                                | 61  | 33           | 46    |               |
| GYRAULUS  | -   | 16           | 31    |               |
|   | 0   | 8            | 0     |               |
| PHYSA   | 37  | 49           | 6     |               |
| -   | 0   | -            | 0     |               |
| VALVATA TRICARINATA                             | 40  | 59           | 33    |               |
| ALL GASTROPODA                                  |     |              |       | 3581          |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM           | 95  | 09           | 56    | 1432          |
| ALL PELECYPODA                                  |     |              |       | 1432          |

| MACKUZUUBENIHUS PUNAK GRAB CUUNI UATA          | ₫                     |                |          | 10/11/84      |
|--|-----------------------|----------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 4 STATION 2           |                       | 940            | 4        |               |
|  | <b>5</b> <del>-</del> | 1 2 3          | 0 E      | NO./SQ. METER |
| MYZON  | 0                     | ٥              | -        | 7             |
| ALL FISH                                       |                       |                |          | 7             |
| CNIDARIA<br>Hydra                              | 3294                  | 3294 3075 2418 | 2418     | 60513         |
| ALL CNIDARIA                                   |                       |                |          | 60513         |
| RHABDOCOELA                                    | 0                     | ٥              | -        | 7             |
| TRICLADIDA                                     | 8                     | 0              | 0        | 14            |
| NEMERTINEA                                     | 16                    | Ø              | <b>c</b> | 227           |
| NEMATODA                                       | 20                    | ID.            | 9        | 241           |
| HIRUDINEA<br>ERPOBDELLIDAE                     | -                     | 0              | 0        |               |
| GLOSSIPHONIIDAE<br>ACTINOBDELLA INEQUIANNULATA | 0                     | -              | 0        |               |
| ALL HIRUDINEA                                  |                       |                |          | 41            |

| TRANSECT 4 STATION 2 (CONT'D) | ;            | i           |             |                                       |
|-------------------------------|--------------|-------------|-------------|---------------------------------------|
| TAXON                         | - GRA        | GRAB COUNTS | STAL<br>B   | ESTIMATED NO./SQ. METER               |
| OLIGOCHAETA                   | !<br>!<br>!  |             | !<br>!<br>! | # # # # # # # # # # # # # # # # # # # |
| NAIS                          | 48           | 0           | 0           |                                       |
| SPIROSPERMA                   | 32           | 9           | 8           |                                       |
| STYLARIA                      | <del>5</del> | 0           | ٥           |                                       |
| OTHER<br>ALL OLIGOCHAETA      | 275          | S<br>S      | 135         | 3946                                  |
| CLADOCERA<br>BOSMINA          | -            | ħ           | 25          |                                       |
| DAPLALA                       | 16           | -           | 24          |                                       |
| HOLOPEDIUM                    | 0            | -           | 0           |                                       |
| ALL CLADOCERA                 |              |             |             | 578                                   |
| COPEPUDA<br>DIAPTOMUS         | <b>\$</b>    | 0           | 0           |                                       |
| HARPACTICOIDA                 | -            | 0           | 0           |                                       |
| ALL COPEPODA                  |              |             |             | 117                                   |
| OSTRACODA                     | -            | 0           | 0           | ٠                                     |
| AMPHIPDDA<br>Gammarus         | <b>6</b>     | <b>an</b>   | IO.         | 500                                   |
| ALL AMPHIPODA                 |              |             |             | 200                                   |
| TERRESTRIAL INSECT            | -            | 0           | 0           |                                       |
|                               |              |             |             |                                       |

| #IDAE  | #IDAE  | TANALOG CONTRACTOR OF THE PROPERTY OF THE PROP |             |          |     |               |
|--|--|--|-------------|----------|-----|---------------|
| DMIDAE  DME  DME  DME  DME  DME  DME  DME  | DMIDAE  DMIDAE  DAE  DAE  DAE  DAE  DAE  DAE  DAE  | TRANSECT 4 STATION 2 (CONT'D)  | <b>A</b> B9 | 0        | STA | ESTIMATED     |
| 236 19 35 199 1 0 8 205 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | DMIDAE DAE DAE DAE DAE DAE DAE DAE DAE DAE   |  | 1           | ~        | 6   | NO./SQ. METER |
| PTERA PTERA 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | PTERA PTERA 1 0 0 8 205 101DAE 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1  |             | 9        | ķ   | 7881          |
| PTERA  PTERA  1 0 0  101DAE  1 0 0  1 1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  | PTERA  PTERA  1 1 0 0  10 10 0  10 10 0  10 10 0  10 10 10  10 10  | CHIRONOMIDAE   | 7           | <u> </u> | ) « |               |
| PTERA  1 0 0  1 1 0 0  DIDAE  PPUS  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 1   | 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | EMPIDIDAE<br>ALL DIPTERA   | •           | •        | )   | 2059          |
| ROPTERA ROPTERA HE PODIDAE ROPUS ROPUS FIRM FIRM FIRM FIRM FIRM FIRM FIRM FIRM   | E 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 0 0 0 0  | EPHEMEROPTERA  |             |          |     |               |
| ROPTERA ROPTERA HE PODIDAE ROPUS ROPUS FIRM FIRM FIRM FIRM FIRM FIRM FIRM FIRM   | ROPTERA ROPTERA HE PODIDAE ROPUS PTERA A 1 0 1   | CAENIDAE   | •           | •        | c   |               |
| ROPTERA ROPTERA HE PODIDAE PODIDAE POTERA TABLE A TABL | ROPTERA ROPTERA HE PODIDAE PODIDAE PTERA H H H H H H H H H H H H H H H H H H H   | CAENIS   | •           | >        | •   |               |
| ROPTERA ROPTERA HE POIDAE POIDAE PTERA H H H H H H H H H H H H H H H H H H H   | ROPTERA ROPTERA PODIDAE ROPUS POTERA T O 0 T O 1 TERA  | EPHEMERIDAE  | ,           |          | •   |               |
| IDAE HE PODIDAE POTIDAE PTERA H H H H H H H H H H H H H H H H H H H  | ROPTERA TDAE TO 0 PODIDAE ROPUS TERA TERA TA 1 0 1   | HEXAGENIA  | -           | -        | 0   |               |
| HE TERA TO 0 0 PTERA TO 0 0 PTERA TO 0 0 PTERA TO 1 PTE | 1DAE HE PODIDAE ROPUS TO 0 TERA TO 0 TA 1 TO 1 TO 1 TO 1   | ALL EPHEMEROPTERA  |             |          |     | 12            |
| SYCHIDAE PSYCHE PSYCHE CENTROPODIDAE CENTROPOLS CENTROPOLS CENTROPOLS CENTROPOLS CENTROPOLS CENTROPOLS CONATA CONATA   | SYCHIDAE PSYCHE PSYCHE CENTROPODIDAE TCHOPTERA ICHOPTERA TCHOPTERA TO 1 TCHOPTERA | TRICHOPTERA  |             |          |     |               |
| PSYCHE NTROPOLDAE NTROPOLDAE CENTROPUS CENTROPUS CENTROPUS CENTROPUS CENTROPUS TCHOPTERA TCHOPTERA TCHOPTERA TO 1 TCHOPTERA TO | DAE TO   | HYDROPSYCHIDAE   | •           | •        | ć   |               |
| CENTROPOIDAE  CENTROPUS  ICHOPTERA  ICHOPTERA  1 0 1  US  US  ONATA  | MTROPODIDAE  CENTROPUS  ICHOPTERA  1 0 0  1 CHOPTERA  DAE  US  ONATA   | HYDROPSYCHE  | -           | >        | >   |               |
| CENTROPUS  1 0 0  1 1 0 0  1 1 0 0  1 1 0 0  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  1 1 0 1  | CENTROPUS  1 CHOPTERA  ICHOPTERA  1 O 1  US  UNATA   | POLYCENTROPODIDAE  | •           | •        | (   |               |
| ICHOPTERA  DAE  1 0 1  US  ONATA   | ICHOPTERA  DAE  t 0 1  US  US  ONATA   | PHYLOCENTROPUS   | -           | 0        | 0   |               |
| DAE 1 0 1 US   | DAE 1 0 1 US ONATA 4 1 0   | ALL TRICHOPTERA  |             |          |     | 4             |
| DAE<br>US<br>US<br>ONATA   | DAE<br>US<br>US<br>ONATA   | DDONATA  |             |          |     |               |
| DNATA  | DNATA  | GOMPHIDAE  | •           | C        | •   | 71            |
| DNATA  | DNATA 4 1 0  | COMPHAS  | •           | >        | •   | <u>:</u>      |
|  | 0 **   | ALL ODONATA  |             |          |     | <b>.</b>      |
|  | · ·  |  | •           | •        | •   | 74            |

Ŧ

| MACROZGOBENTHOS PONAR GRAB COUNT DATA |            |             |           | 10/17/84                |
|---------------------------------------|------------|-------------|-----------|-------------------------|
| TRANSECT 4 STATION 2 (CONT'D)         |            |             |           |                         |
| TAXON                                 | <u>8</u> - | GRAB COUNTS | UNTS<br>3 | ESTIMATED NO./SQ. METER |
| GASTROPODA                            |            | -           |           |                         |
| AMNICOLA                              | 36         | 30          | 43        |                         |
|                                       | ~          | 12          | 0         |                         |
| GYRAULUS                              | -          | 0           | -         |                         |
| LYMAEA                                | 0          | 0           | -         |                         |
| PHYSA                                 | ø          | 9           | ø         |                         |
|                                       | -          | 6           | -         |                         |
| ALL GASTROPODA                        |            |             |           | 1164                    |
| PELECYPODA                            |            |             |           |                         |
| SPHAERIIDAE<br>Pisidium               | 80         | <b>5</b>    | 77        | 820                     |
| CNIONIDAE                             | 0          | 0           | -         |                         |
| ALL PELECTPOOA                        |            |             |           | 826                     |

| ST. CLAIR RIVER TI               |                      |            |      |             |                         |
|----------------------------------|----------------------|------------|------|-------------|-------------------------|
|                                  | TRANSECT 4 STATION 3 |            |      |             |                         |
| TAXON                            |                      | <b>ē</b> − | ₹8 Ω | GRAB COUNTS | ESTIMATED NO./SQ. METER |
| CNIDARIA<br>HYDRA                | P                    |            |      |             |                         |
| ALL CNIDARIA                     |                      | }          | 9    | 200         | 67/56                   |
|                                  |                      |            |      |             | 53723                   |
| RHABDOCOELA                      |                      | 0          | 0    | -           | 7                       |
| TRICLADIDA                       |                      | 0          | -    | 0           | 1                       |
| NEMERTINEA                       |                      | 0          | 6    | 11          | 248                     |
| NEMATODA                         |                      | <b>S</b> O | 4    | ō           | 413                     |
| OLIGOCHAETA<br>Stylaria          |                      | 0          | 60   | -           |                         |
| OTHER<br>ALL OLIGOCHAETA         |                      | 90         | 8    | 165         | 9                       |
| CLADOCERA                        |                      |            |      |             | )                       |
| BOSMINA                          |                      | 8          | 80   | 24          |                         |
| DAPHNIA                          |                      | -          | 9    | 60          |                         |
| HOLOPEDIUM                       |                      | u          | •    | (           |                         |
|                                  |                      | n          | >    | <b>)</b>    |                         |
| ALL CLADGCERA                    |                      |            |      |             | 14                      |
| COPEPODA<br>CYCLOPS BICUSPIDATUS | v                    | c          | •    | •           |                         |
|                                  | ) i                  | >          | )    | 9           |                         |
| MESOCYCLOPS                      |                      | 0          | 0    | €           |                         |
| ALL COPEPODA                     |                      |            |      |             | 165                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |          |             |            | 10/17/84                   |
|---|----------|-------------|------------|----------------------------|
| TRANSECT 4 STATION 3 (CONT'D)                   |          |             |            |                            |
| TAXON   | GRA<br>A | GRAB COUNTS | UNTS<br>3  | ESTIMATED<br>NO./SQ. METER |
| AMPHI PODA<br>GAMMARUS                          | -        | 4           | 6          | 96                         |
| ALL AMPHIPODA                                   |          |             |            | 96                         |
| CHIRONOMIDAE<br>EMPIDIDAE                       | ۰ 0      | <b>∞</b> −  | ţ°         | 186                        |
| ALL DIPTERA<br>Ephemeroptera                    |          |             |            | 193                        |
| CAENIS  | 0        | -           | 0          |                            |
| BAETISCIDAE<br>BAETISCA                         | 0        | -           | -          |                            |
| HEPTAGENI IDAE<br>STENONEMA                     | 0        | N           | 0          |                            |
| ALL EPHEMEROPTERA                               |          |             |            | 34                         |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | N        | -           | <b>I</b> O |                            |
| HYDROPSYCHE                                     | 60       | 8           | 4          |                            |
| LEPTOCERIDAE<br>CERACLEA                        | 0        | 0           | -          |                            |
| RHYACOPHILIDAE<br>PROTOPTILA                    | 0        | -           | 0          |                            |
| ALL TRICHOPTERA                                 |          |             |            | 234                        |
| ACARINA   | 0        | 2           | -          | 06                         |

10/11/84

| ESTIMATED<br>NO./SO. METER   |   |            |                  |          |         | 420                     | 96                        |                                |
|--|---|------------|------------------|----------|---------|-------------------------|---------------------------|--------------------------------|
| SE   | Ξ | 22         | 0                | 0        | 0       |                         | Ξ                         |                                |
| COUN   | - | <b>8</b>   | -                | ~        | 0       |                         | 7                         |                                |
| GRAB COUNTS  |   | ro         | 0                | 0        | 8       |                         | -                         |                                |
| MACROZOOBENTHOS PONAR GRAB COUNT DATA<br>TRANSECT & STATION 3 (CONT'D) |   | GASTROPODA | ELIMIA LIVESCENS | FERISSIA | LYMNAEA | PHYSA<br>ALL GASTROPODA | PELECYPODA<br>PDARFRIIDAE | PISIDIUM<br><br>ALL PELECYPODA |

7

| STATION 1         GRAB COUNTS 1         ESTIMATED 3         TAXON 1         COUNTS 3         ESTIMATED 3         DO./SQ. METER 3         DO./SQ. | MACROZOOBENTHOS PONAR GRAB COUNT DATA             |      |        |           | 10/17/84                |
|--|---|------|--------|-----------|-------------------------|
| ARIA  A 6 23 5 8  A 7 7 6  CLIDAE  LLA PUNCTATA  DINEA   |   |      | ZAB CO | UNTS<br>3 | ESTIMATED NO./SQ. METER |
| ARIA  A  A  A  A  A  A  A  A  A  A  A  A   | 1           | 9633 | 9041   | 3578      | 153242                  |
| A 6 23 5 2  A 17 7 6 2  A 17 7 6 2  O 16 17 2  LIDAE  LLA PUNCTATA  O 2 0  IDAE  DINEA   | ALL CNIDARIA                                      |      |        |           | 153242                  |
| A 17 7 6  17 7 6  18 17  LIDAE  LLA PUNCTATA  1 0 0  IDAE  DINEA   | RHABDOCOELA                                       | m    | 8      | 8         | 4                       |
| LIDAE LLA PUNCTATA  LIDAE LLA PUNCTATA  1 0 0  1DAE  1 0 0  1 0 0  1 0 0   | TRICLADIDA  | φ    | 23     | ស         | 234                     |
| LIDAE LLA PUNCTATA  1 0 0  1DAE 1 0 0  1DAE 1 0 0  1DAE 1 0 0  | NEMERTINEA  | 17   | 7      | 9         | 207                     |
| LIDAE LLA PUNCTATA  0 2 0  | NEMATODA  | 0    | 16     | 11        | 227                     |
| LIDAE LLA PUNCTATA 0 2 0   | BRYOZOA   | +    | 0      | 0         | •                       |
| 00   | HIRUDINEA<br>ERPOBDELLIDAE<br>ERPOBDELLA PUNCTATA | 0    | 8      | 0         |                         |
|  | OTHER<br>PISCICOLIDAE<br>ALL HIRUDINEA            | - •  | 00     | 00        | 84                      |

| TRANSECT 5 STATION 1 (CONT'D)                      | ,    | 9                    |            |                            |
|--|------|----------------------|------------|----------------------------|
| TAXON  | š -  | GKAB COUNTS<br>1 2 3 | 2 E        | ESTIMATED<br>NO./SQ. METER |
| OLIGOCHAETA  | <br> | !<br>!               | )<br> <br> |                            |
| NAIS   | 326  | 215                  | 321        |                            |
| SPIROSPERMA  | 16   | <b>6</b>             | 28         |                            |
| STYLARIA   | 486  | 68                   | 502        |                            |
| 1            |      |                      | \$         |                            |
| OTHER<br>ALL OLIGOCHAETA                           | 2237 | 5 19                 | 392        | 36616                      |
| CLADOCERA  | •    |                      |            |                            |
| BOSMINA  | 32   | က                    | -          |                            |
| 1 1 1 1 1 1 1 1                                    |      |                      |            |                            |
| DAPHNIA  | 0    | 0                    | -          |                            |
|  |      |                      |            |                            |
| HOLOPEDIUM   | 16   | 0                    | -          |                            |
|  | •    | C                    | •          |                            |
| 70 11 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13 | >    | >                    | •          |                            |
| ALL CLADOCERA                                      |      |                      |            | 379                        |
| COPEPODA   |      |                      |            |                            |
| DIAPTOMUS  | 9    | 0                    | 0          | 110                        |
| ALL COPEPODA                                       |      |                      |            | 110                        |
| OSTRACODA  | 0    | -                    | 0          | 7                          |
| AMPHIPODA  |      |                      |            |                            |
| GAMMARUS   | 344  | 492                  | 282        |                            |
| HYALELLA AZTECA                                    | n    | -                    | ស          |                            |
|  |      |                      |            |                            |
| ALL AMPHIPODA                                      |      |                      |            | 1761                       |
| DIPTERA  |      |                      |            |                            |
| CHIRONOMIDAE                                       | 175  | 316                  | 203        | 4779                       |

| MACKUZUUBENIHUS PONAR GRAB COUNT DATA   |            |             |      | 10/17/84               |
|---|------------|-------------|------|------------------------|
| TRANSECT 5 STATION 1 (CONT'D)           |            |             |      |                        |
| TAXON                                   | <b>ö</b> - | GRAB COUNTS | UNTS | ESTIMATED NO /SO METER |
| EPHEMEROPTERA                           |            |             |      |                        |
| CAENIDAE                                |            |             |      |                        |
| CAENIS                                  | 37         | 4           | 30   |                        |
| EPHEMERIDAE                             |            |             |      |                        |
| HEXAGENIA                               | S          | 114         | 108  |                        |
|   |            |             | }    |                        |
| EPHEMERELLIDAE                          |            |             |      |                        |
| EPHEMERELLA                             | -          | 0           | c    |                        |
|   |            | •           | )    |                        |
| BAETISCIDAE                             |            |             |      |                        |
| BAETISCA                                | 7          | 0           | 7    |                        |
| * * * * 1 * 1                           | •          | 4           | !    |                        |
| HEPTAGENIIDAE                           |            |             |      |                        |
| STENONEMA                               | 9          | 4           | e    |                        |
| * | •          | •           | •    |                        |
| ALL EPHEMEROPTERA                       |            |             |      | 2906                   |
|   |            |             |      |                        |
|   |            |             |      |                        |
| CIRTOAE                                 | •          | •           |      |                        |
|   | -          | 0           | 0    |                        |
| ALL COLFODIEDA                          |            |             |      |                        |
| ALL COLLOS LEAD                         |            |             |      | •                      |

| MACKUZUUBENIHUS PUNAR GRAB COUNT DATA   |                                     |             |             | 10/17/84      |
|---|-------------------------------------|-------------|-------------|---------------|
| TRANSECT 5 STATION 1 (CONT'D)           | ě                                   | į           |             |               |
| TAXON                                   | ¥ +-                                | GKAB CUUNIS | 2 E         | NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE          | ,<br> <br> <br> <br> <br> <br> <br> |             | !<br>!<br>! | (             |
| BRACHYCENTRUS                           | 8                                   | 0           | 8           |               |
| MICRASEMA                               | -                                   | 0           | 0           |               |
| HXDBDDSXCHI                             |                                     |             |             |               |
| CHEUMATOPSYCHE                          | 21                                  | Ξ           | 0           |               |
| HYDROPSYCHE                             | 31                                  | ē.          | e           |               |
| 1 |                                     |             |             |               |
| LEPTOCERIDAE                            | •                                   | (           | ,           |               |
| CERRCLEA                                | 0                                   | m           | ~           |               |
| MYSTACIDES                              | 0                                   | 7           | 0           |               |
| 1 |                                     |             |             |               |
| OECETIS                                 | 0                                   | -           | -           |               |
| SETONES                                 | c                                   | -           | c           |               |
|   | )                                   |             | •           |               |
| TRIAENODES                              | 0                                   | -           | 0           |               |
|   |                                     |             |             |               |
| POLYCENTROPODIDAE                       | •                                   | (           | (           |               |
| NEURECLIPSIS                            | -                                   | 0           | 0           |               |
| POLYCENTROPUS                           | -                                   | 0           | 0           |               |
| ALL TRICHOPTERA                         |                                     |             |             | 675           |
| ODDONATA                                |                                     |             |             |               |
| GOMPHUS                                 | 0                                   | -           | -           | 41            |
| ALL ODONATA                             |                                     |             |             | 4             |
| 42 C4                                   | 2.                                  | α           | -           | 207           |
| ACAKINA                                 | -                                   | 0           | -           | 3             |
|   |                                     |             |             |               |

1

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |             |             |      | 10/17/84      | 34    |
|---------------------------------------|-------------|-------------|------|---------------|-------|
| TRANSECT 5 STATION 1 (CONT'D)         | Yac         | COAR COUNTS | N TA | FCTTMATER     | ç     |
| TAXON                                 | <u> </u>    | 2           |      | NO./SQ. METER | METER |
| GASTROPODA                            | !<br>!<br>! | }<br>{<br>{ | <br> |               |       |
| AMNICOLA                              | <b>5</b> 1  | 11          | 9    |               |       |
| ELIMIA LIVESCENS                      | ស           | 16          | ō    |               |       |
|                                       | 5           | 58          | g    |               |       |
| VALVATA TRICARINATA                   | 13          | 4           | 21   |               |       |
| ALL GASTROPODA                        |             |             |      | 1591          |       |
| PELECYPODA                            |             |             |      |               |       |
| SPHAESIIDAE                           | 40          | 8           | 4    | 1384          |       |
|                                       | •           | 3           | 5    |               |       |
| UNIONIDAE                             | 0           | -           | 0    | į             |       |
| ALL PELECYPODA                        |             |             |      | 1381          |       |

| ST. CLAIR RIVER TRANSECT 5 STATION 2           |                 |      |             |               |             |
|--|-----------------|------|-------------|---------------|-------------|
|  | GRA             | 8 00 | GRAB COUNTS | ESTIMATED     | 60          |
| TAXON  | -               | 7    | e           | NO./SQ. METER | WETE        |
| CNIDARIA<br>Hydra                              | 1241010672 9495 | 672  | 9495        | 224347        | !<br>!<br>! |
| ALL CNIDARIA                                   |                 |      |             | 224347        |             |
| RHABDGCOELA                                    | 0               | 0    | -           | 7             |             |
| TRICLADIDA                                     | 8               | 0    | 0           | 4             |             |
| NEMERTINEA                                     | 0               | 17   | -           | 124           |             |
| NEMATODA                                       | £               | 32   | ო           | 613           |             |
| HIRUDINEA<br>PISCICOLIDAE<br>PISCICOLA MILNERI | 0               | -    | -           |               |             |
| ALL HIRUDINEA                                  |                 |      |             | 41            |             |
| OL IGOCHAETA<br>Nais                           | 66              | 64   | 9           |               |             |
| SPIROSPERMA                                    | 7               | m    | 9           |               |             |
| STYLARIA                                       | 1011            | 744  | 683         |               |             |
| OTHER<br>ALL OF IGOCHAFTA                      | 234             | 981  | 294         | 28821         |             |
|  |                 |      |             |               |             |

|                         | 8   | GRAB COUNTS | JNTS | ESTIMATED     |
|-------------------------|-----|-------------|------|---------------|
| TAXON                   | - 1 | 7           | 9    | NO./SQ. METER |
| CLADOCERA               |     |             |      |               |
| BOSMINA                 | 4   | 24          | 6    |               |
| DAPHNIA                 | -   | 0           | ស    |               |
| EURYCERCUS LAMELLATUS   | 5   | 0           | 0    |               |
|                         | 1   | 1           |      |               |
| HOLOPEDIUM              | m   | 11          | lo   |               |
| ALL CLADOCERA           |     |             |      | 1109          |
| COPEPODA                |     |             |      |               |
| CYCLOPS BICUSPIDATUS    | 35  | -           | 0    |               |
| DIAPTOMUS               | 16  | 0           | 16   |               |
| HARPACTICOIDA           | -   | 9           | 0    |               |
| ALL COPEDDA             |     |             |      | 565           |
| OSTRACODA               | 11  | 34          | 33   | 578           |
| AMPHIPODA               |     |             |      |               |
| GAIMARUS                | 103 | 350         | 8    |               |
| HYALELLA AZTECA         | 60  | 8           | 0    |               |
| ALL AMPHIPODA           |     |             |      | 3326          |
| TERRESTRIAL INSECT      | -   | -           | -    | 21            |
| DIPTERA<br>CHIRONOMIDAE | 316 | 558         | 98   | 6611          |

|   |     |             |           | 10/11/84                |
|---|-----|-------------|-----------|-------------------------|
| TRANSECT 5 STATION 2 (CONT'D)           |     |             |           |                         |
|   | g - | GRAB COUNTS | JNTS<br>3 | ESTIMATED NO./SQ. METER |
| EPHEMEROPTERA                           |     |             | !         |                         |
| CAENIDAE                                |     |             |           |                         |
| CAENIS                                  | 38  | 72          | -         |                         |
|   |     |             |           |                         |
| RPTREERIOAE<br>Section 1                |     |             |           |                         |
| TEXAGENIA                               | 248 | 306         | 68        |                         |
| HEDTAGENTIDAE                           |     |             |           |                         |
| STENONEMA                               | ď   | 96          | Ş         |                         |
|   | •   | 2           | 2         |                         |
| ALL EPHEMEROPTERA                       |     |             |           | 5509                    |
| TRICHOPTERA                             |     |             |           |                         |
| HYDROPSYCHIDAE                          |     |             |           |                         |
| CHEUMATOPSYCHE                          | 4   | 7           | c         |                         |
| * | •   | •           | •         |                         |
| HYDROPSYCHE                             | 23  | 33          | σ         |                         |
| • | l   | ;           | •         |                         |
| LEPTOCERIDAE                            |     |             |           |                         |
| CERACLEA                                | -   | 8           | 8         |                         |
| !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! |     |             | ı         |                         |
| MYSTACIDES                              | 0   | a           | 0         |                         |
| 1 |     |             | ı         |                         |
| NECTOPSYCHE                             | 0   | 0           | 8         |                         |
|   |     |             |           |                         |
| POLYCENTROPODIDAE                       |     |             |           |                         |
| NEURECLIPSIS                            | 7   | 0           | -         |                         |
|   | ,   | ,           | ,         |                         |
| 101011111111111111111111111111111111111 | -   | 0           | 0         |                         |
| ALL TRICHOPTERA                         |     |             |           | 661                     |
| DOONATA                                 |     |             |           |                         |
| GOMPHIDAE                               |     |             |           |                         |
| GOMPHUS                                 | 0   | -           | 0         | 7                       |
|   |     |             |           |                         |
| ALL ODONATA                             |     |             |           |                         |
| ACARINA                                 | C   | 5           | ď         | 376                     |
|   | ,   | )           | 7         | 017                     |

|                                       |    |          |      | *0/11/01                        |
|---------------------------------------|----|----------|------|---------------------------------|
| TRANSECT 5 STATION 2 (CONT'D)         | Č  | Š        |      |                                 |
| TAXON                                 | ž  | 1 2 3    | 2 60 | NO./SQ. METER                   |
| GASTROPODA<br>Amnicola                | 39 | 60       | 43   | ?<br>!<br>!<br>!<br>!<br>!<br>! |
| ELIMIA LIVESCENS                      | =  | -        | 90   |                                 |
| GYRAULUS                              | -  | -        | -    |                                 |
| LYMMAEA                               | 0  | 0        | -    |                                 |
| PLEUROCERA ACUTA                      | 0  | -        | -    |                                 |
| VALVATA SINCERA                       | 0  | -        | 0    |                                 |
| VALVATA TRICARINATA                   | 26 | 32       | 7    |                                 |
| ALL GASTROPODA                        |    |          |      | 1639                            |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | ŝ  | 10<br>10 | 42   | 88                              |
| ALL PELECYPODA                        |    |          |      | 888                             |
|                                       |    |          |      | 1                               |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |          |             |           | 10/17/84                   |
|---------------------------------------|----------|-------------|-----------|----------------------------|
| ST. CLAIR RIVER TRANSECT 5 STATION 3  |          | !           |           |                            |
|                                       | <u> </u> | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>Hydra                     | 2260     | 374         | 527       | 21769                      |
| ALL CNIDARIA                          |          |             |           | 21769                      |
| TRICLADIDA                            | 0        | 0           | -         | 7                          |
| NEMERTINEA                            | 20       | •           | ø         | 234                        |
| NEMATODA                              | 7        | -           | 4         | 69                         |
| OL IGOCHAETA<br>NA IS                 | <b>6</b> | 0           | 0         |                            |
| STYLARIA                              | 11       | 0           | -         |                            |
| OTHER<br>ALL OLIGOCHAETA              | 38       | 24          | <b>60</b> | 1377                       |
| CLADOCERA<br>BOSMINA                  | <b>Q</b> | 5           | €0        |                            |
| DAPHNIA                               | -        | -           | ın        |                            |
| EURYCERCUS LAMELLATUS                 | 0        | -           | 0         |                            |
| HOLOPEDIUM                            | 33       | n           | <u>+</u>  |                            |
| ALL CLADOCERA                         |          |             |           | . 029                      |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA       |             |          |     | 10/17/84      |
|---|-------------|----------|-----|---------------|
| TRANSECT S STATION 3 (CONT'D)               | GRAB COUNTS | 9        | SLX | ESTIMATED     |
| TAXON                                       | -           | 7        | 6   | NO./SQ. METER |
| · >   | თ           | 6        | 0   |               |
|   | •           | •        | ٢   |               |
| DIAPTOMUS                                   | ю           | 9        | -   |               |
| EPISHURA LACUSTRIS                          | 0           | <b>6</b> | -   |               |
|   | -           | o        | 0   |               |
|   | •           | •        | •   |               |
| ALL COPEPODA                                |             |          |     | 346<br>44     |
| AMPHIPODA<br>GAMMA BIIC                     | 4           | -        | 0   | 34            |
|   |             |          |     | , ,           |
| ALL AMPHIPODA                               |             |          |     | <b>9</b> 6    |
| DIPTERA<br>CHIRONOMIDAE                     |             | 25       | 8   | 1074          |
| EPHEMEROPTERA<br>Caentoae                   |             |          |     |               |
| CAENIS                                      | 0           | -        | 0   |               |
| EPHEMERIDAE<br>HEXAGENIA                    | -           | 0        | -   |               |
|   |             |          |     |               |
| HEY I AGENT TO ACSTENDARY STENDING MANAGEMA | -           | 0        | 0   |               |
| ALL EPHEMEROPTERA                           |             |          |     | 28            |
| TRICHOPTERA                                 |             |          |     |               |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE            | ÷           | 4        | 0   |               |
| HYDROPSYCHE                                 | 19          | ō        | -   |               |
| LEPTOCERIOAE                                |             |          |     |               |
| CERACLEA                                    | -           | -        | 0   |               |
| ALL TRICHOPTERA                             |             |          |     | 613           |
| PLECOPTERA                                  | •           | •        | (   | ;             |
| ISOGENDIDES                                 | 8           | 0        | 0   | 4             |
| ALL PLECOPTERA                              |             |          |     | <del>-</del>  |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA   |             |             | 10/17/84      |
|---|-------------|-------------|---------------|
| TRANSECT 5 STATION 3 (CONT'D)           |             |             |               |
|   | GRAB        | GRAB COUNTS | ESTIMATED     |
| TAXON                                   | -           | 1 2 3       | NO./SQ. METER |
| PELECYPODA                              | 1 1 1 1 1 1 |             |               |
| SPHAERIIDAE                             |             |             |               |
| PISIDIUM                                | -           | -           | 71            |
| * 1 1 2 1 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 | •           | ,           | :             |
| ALL PELECYPODA                          |             |             | •             |

|  | MACROZOOBENTHOS PONAR GRAB COUNT DATA           | ONAR GRAB CO | UNT DATA  |         |              |      | 10/17/84                                       |
|--|---|--------------|-----------|---------|--------------|------|--|
| LA 177 156 111 9944  ARIA  ARIA  AND /50.  1 2 3 NO /50.  1 1 2 3 NO /50.  1 1 1 9944  9944  1 1 1 3 2 3 8 3 0  1 1 1 9 3 10  1 1 1 1 9 3 10  1 1 1 1 9 3 10  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | ST. CLAIR RIVER                                 |              | 6 STATION | eg<br>- | <b>18</b> C0 | CNTS | ESTIMATED                                      |
| FERA   | TAXON   |              |           | -       | 8            | 6    | NO./SQ. METER                                  |
|  | PORIFERA<br>Spongilla                           |              |           | 0       | +            | ٥    | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
| 1177 156 111 8  14A  14 13 23  15 11 8  10NITDAE  11 13 23  25 11 8  24 0 0  27 2  28 14 9  24 0 0  27 2  28 140  37 55 107  44  123 128 140  37 55 107  44  123 128 140  37 55 107  44  123 128 140  37 55 107  44  124 0 0  125 15 24  127 15 24  127 15 24  128 140  108  108  108  108  108  108  108  | ALL PORIFERA                                    |              |           |         |              |      | 0  |
| ARIA  LLA  A  41 13 23  A  A1 13 23  A  BONITDAE  LLLA ELONGATA  TA  TA  TA  CHARA  12 15 24  12 15 24  A  123 128 140  A  10M  37 55 107  A  TUM  38 54 0  TUM  GCERA   | CNIDARIA<br>Hydra                               |              |           | 1177    | 156          | Ξ    | 9944   |
| LA 41 13 23  25 11 8  DONITDAE  LLA ELONGATA  TA  TA  TA  CCHAETA  38 54 0  TUM  TO 2 2  29 29  20 2  24 0 0  24 0 0  25 15 24  26 0 0  27 26  28 24 0  37 55 107  48 24 0   | ALL CNIDARIA                                    |              |           |         |              |      | 984  |
| A 41 13 23  25 11 8  COLNEA  TA  TA  COCHAETA  1UM  26 0 2  27 0 2  24 0 0  12 15 24  123 128 140  37 55 107  4  1UM  38 54 0  | RHABDOCOELA                                     |              |           | 0       | 8            | ~    | 79   |
| DONITDAE  LLLA ELONGATA  DINEA  TA  TA  CERMA  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  14 0  1 0 0 0 0   | TRICLADIDA                                      |              |           | 7       | 5            | 23   | 530  |
| DONIDAE  LLA ELONGATA  DINEA  TA  TA  CERMA  A  A  A  A  TURN  TUR | NEMATODA  |              |           | 28      | =            | ø    | 310  |
| TA 24 0 0  ERMA 12 15 24  A 123 128 140  A 37 55 107  OCHAETA 38 54 0  OCERA   | HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA ELOM | BATA         |           | n       | 0            | 8    |  |
| TA 24 0 0  ERMA 12 15 24  123 128 140  A 37 55 107  OCHAETA 38 54 0  OCERA   | ALL HIRUDINEA                                   | !            |           |         |              |      | <b>38</b>                                      |
| 12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  12 15 24  10 10 10 10 10 10 10 10 10 10 10 10 10 1   | OL I GOCHAETA<br>NATS                           |              |           | 7       | •            | (    |  |
| 12 15 24  123 128 140  120CHAETA  12 15 24  12 10 140  17 55 107  10M  10M  10M  10M  10M  10M  10M  | 1   |              |           | 5       | >            | >    |  |
| A 123 128 140  OCHAETA 37 55 107  UM 38 54 0  OCERA  | SPIROSPERMA                                     |              |           | 5       | ŧ.           | 24   |  |
| 37 55 107<br>OCHAETA 37 55 107<br>1UM 38 54 0  | STYLARIA  |              |           | 123     | 128          | 140  |  |
| 37 55 107  OCHAETA  9 24 0  1UM  38 54 0  OCERA  | 1 1 1 1 1 1 1 1 1                               |              |           |         | }            | ?    |  |
| 9 24 0<br>1UM 38 54 0<br>0CERA   | ALL DLIGOCHAETA                                 |              |           | 37      | in<br>in     | 101  | 4580   |
| 9 24 0<br>1UM 38 54 0<br>0CERA   | CLADOCERA                                       |              |           |         |              |      |  |
| 38 54 0  | DAPHNIA   |              |           | æ       | 24           | 0    |  |
|  | HOLOPEDIUM                                      |              |           | 38      | 24           | 0    |  |
|  | ALL CLADOCERA                                   |              |           |         |              |      | 198  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA               |         |             |           | 10/17/84                              |
|---|---------|-------------|-----------|---------------------------------------|
| TRANSECT 6 STATION 1 (CONT'D) TAXON                 | 95<br>+ | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER            |
| COPEPODA DIAPTOMUS                                  | 0       | 80          | 0         | ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; |
| EPISHURA LACUSTRIS                                  | •       | 8           | -         |                                       |
| ALL COPEPODA  |         |             |           | 76                                    |
| OSTRACODA   | 43      | 8           | 24        | 1019                                  |
| ANPHIPODA<br>Gannarus                               | 227     | 108         | 195       | 3650                                  |
| ALL AMPHIPODA                                       |         |             |           | 3650                                  |
| ISOPODA<br>ASELLUS<br>ALL ISOPODA                   | -       | 0           | 0         |                                       |
| TERRESTRIAL INSECT                                  | 0       | 8           | 0         | <b>7</b>                              |
| DIPTERA<br>CHIRONOMIDAE<br>EMPIDIDAE<br>ALL DIPTERA | 158     | 101         | 94<br>0   | 2830                                  |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS                 | 38      | 79          | 62        | ·                                     |
| EPHEMERIDAE<br>HEXAGENIA                            | 148     | 149         | 225       |                                       |
| EPHEMERELLIDAE<br>EPHEMERELLA                       | -       | 0           | •         |                                       |
| ALL EPHEMEROPTERA                                   |         |             |           | 4841                                  |

(

| MACRUZOGBENTHOS PONAR GRAB COUNT DATA           |      |             |          | 10/11/84                   |
|---|------|-------------|----------|----------------------------|
| TRANSECT 6 STATION 1 (CONT'D)                   | į    | į           | ,        |                            |
| TAXON   | GRAE | GRAB COUNTS | S E      | ESTIMATED<br>NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE<br>BRACHYCENTRUS | -    | ٥           | 0        | 1                          |
| LEPTOCERIOAE                                    |      | •           | •        |                            |
| CERACLEA  | ō    | ~           | ED.      |                            |
| OECETIS   | 0    | ທ           | 7        |                            |
| SETODES   | 0    | ٥           | 4        |                            |
| POLYCENTROPODIDAE POLYCENTROPUS                 | -    | 0           | ٥        |                            |
| ALL TRICHOPTERA                                 |      |             |          | 303                        |
| ACARINA   | 0    | ~           | -        | 4                          |
| GASTROPODA                                      |      |             |          |                            |
| AMNICOLA  | 36   | 22          | =        |                            |
| ELIMIA LIVESCENS                                | 9    | 22          | <b>E</b> |                            |
| GYRAULUS  | \$   | 6           | 25       |                            |
|   |      |             |          |                            |
| PHYSA :: : : : : : : : : : : : : : : : : :      | ဓ္က  | 0           | ∞        |                            |
| ALL GASTROPODA                                  |      |             |          | 1694                       |
| PELECYPODA                                      |      |             |          |                            |
| SPHAERIIDAE<br>Diesestina                       | ¢    | •           | •        |                            |
|   | 7    | -           | -        |                            |
| SPHAERIUM                                       | -    | a           | m        |                            |
| ALL SPHAERIIDAE                                 |      |             |          | 76                         |
|   |      |             |          | 2                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA              |        |               |              | 10/17/84                   |
|--|--------|---------------|--------------|----------------------------|
| IR RIVER TRANSECT                                  |        | GRAB COUNTS   | JNTS<br>3    | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                                  | 707 50 | 707 5091 4625 | 4625         | 71780                      |
| ALL CNIDARIA                                       |        |               |              | 71780                      |
| RHABDOCUELA  | g      | 6             | 1            | 110                        |
| TRICLADIDA   | =      | -             | 9            | 213                        |
| NEMERTINEA   | ~      | 0             | 0            | 4                          |
| NEMATODA   | 35     | ~             | <del>6</del> | 358                        |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>HELGBOELLA ELONGATA | 0      | -             | 0            |                            |
| PISCICOLIDAE<br>PISCICOLA                          | -      | ٥             | -            |                            |
| ALL HIRUDINEA                                      |        |               |              | 21                         |
| OLIGOCHAETA<br>Nais                                | 0      | y             | 16           |                            |
| SPIROSPERMA  | -      | 0             |              |                            |
| STYLARIA   | 231    | 97            | 227          |                            |
| OTHER<br>ALL OLIGOCHAETA                           | 42     | 88            | 11           | 5413                       |

| MACROZOOBENTHOS POWAR GRAB COUNT DATA                     |     | •            |     | 10/17/84      |
|---|-----|--------------|-----|---------------|
| TRANSECT 6 STATION 2 (CONT'D)                             | ĝ   | STAIN COMMIS | N T | ESTIMATED     |
| TAXON   | -   | 8            | 200 | NO./SQ. METER |
| CLADOCERA<br>BOSMINA                                      | 80  | <b>5</b>     | 8   |               |
| DAPHNIA   | 35  | 34           | 11  |               |
| HOLOPEDIUM  | 35  | -            | 67  |               |
| ALL CLADOCERA   |     |              |     | 1921          |
| COPEPODA DIAPTOMUS  | 0   | 0            | 5   |               |
| EPISHURA LACUSTRIS  | 0   | ~            | 6   |               |
| MESOCYCLOPS   | 0   | 0            | -   |               |
| ALL COPEDODA  |     |              |     | 213           |
| OSTRACODA   | 5   | ŧ.           | 12  | 269           |
| AMPHI PODA<br>GAMMA RUS                                   | 113 | <del>.</del> | 43  |               |
| HYALELLA AZTECA   | ~   | -            | _   |               |
| ALL AMPHIPODA   |     |              |     | 1357          |
| 1SOPODA<br>ASELLUS  | -   | 0            | 0   | ٢             |
| ALL ISOPODA   |     |              |     | -             |
| TERRESTRIAL INSECT  | 0   | 0            | -   |               |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 342 | 0 191        | 135 | 4394<br>4421  |

| MACKUZUUBENIHUS PUNAK GRAB COUNT DATA  |                  |                      |                  | 10/17/84                   |
|--|------------------|----------------------|------------------|----------------------------|
| TRANSECT 6 STATION 2 (CONT'D)  | ę                | 4                    | ļ                |                            |
|  | <del>-</del>     | GRAB COUNTS<br>1 2 3 | S E              | ESTIMATED<br>NO./SQ. METER |
| ROPTERA  | ;<br>;<br>;<br>; | i<br>                | }<br>!<br>!<br>! |                            |
| CAENIDAE   | ç                | q                    | 4                |                            |
|  | Ş                | D                    | 0                |                            |
| EPHEMERIDAE  |                  |                      |                  |                            |
| HEXAGENIA  | 244              | 336                  | 118              |                            |
| THE STATE OF THE S |                  |                      |                  |                            |
| STENONEMA  | •                | C                    | c                |                            |
| )  | •                | •                    | ,                |                            |
| ALL EPHEMEROPTERA  |                  |                      |                  | 5075                       |
| TRICHOPTERA  |                  |                      |                  |                            |
| BRACHYCENTRIDAE  |                  |                      |                  |                            |
| BRACHYCENTRUS  | 8                | -                    | 8                |                            |
| HYDROPSYCHIDAE   |                  |                      |                  |                            |
| CHEUMATOPSYCHE   | ٥                | 0                    | -                |                            |
|  | (                | •                    | ı                |                            |
|  | >                | 0                    | n                |                            |
| LEPTOCERIDAE   |                  |                      |                  |                            |
| CERACLEA   | -                | 7                    | 0                |                            |
| •  |                  |                      |                  |                            |
| NECTOPSYCHE  | 0                | 0                    | -                |                            |
| 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |                  |                      |                  |                            |
| DECETIS  | -                | 0                    | 0                |                            |
| TRIAENODES   | C                | 0                    | -                |                            |
| 111111111111111111111111111111111111111  | ,                |                      |                  |                            |
| POLYCENTROPODIDAE  |                  |                      |                  |                            |
| NEURECLIPSIS   | 0                | 9                    | 9                |                            |
| \$ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | •                | (                    | ,                |                            |
| POLYCENIKOPUS  | 0                | 0                    | 7                |                            |
| ALL TRICHOPTERA  |                  |                      |                  | 269                        |
| ACARINA  | -                | 0                    | ო                | 28                         |
|  |                  |                      |                  |                            |

| ALAU INDUO BAND ARNO COUNTRIONS |          |             |           | 10/17/84                |
|---------------------------------|----------|-------------|-----------|-------------------------|
| TRANSECT 6 STATION 2 (CONT'D)   |          |             |           |                         |
| TAXON                           | GR.      | GRAB COUNTS | NTS<br>3  | ESTIMATED NO./SQ. METER |
| GASTROPODA                      |          |             |           |                         |
| AMNICOLA                        | <b>©</b> | 21          | စ္တ       |                         |
| ELIMIA LIVESCENS                | 0        | -           | 0         |                         |
| GYRAULUS                        | σ        | ď           | •         |                         |
| PHYSA                           | , ;      | , ,         | ٠ ;       |                         |
|                                 | N        | n           | <b>20</b> |                         |
| VALVATA TRICARINATA             | 0        | 0           | 8         |                         |
| ALL GASTROPODA                  |          |             |           | 785                     |
| PELECYPODA                      |          |             |           |                         |
| SPHAERI IDAE<br>Disidiam        | •        | 1           |           |                         |
|                                 | φ        | m           | -         | 69                      |
| UNIONIDAE                       | -        | 0           | 0         |                         |
| ALL PELECYPODA                  |          |             |           | 76                      |

| MACKUZUUBENIHUS PUNAK GRAB CUUNI DATA               |            |             |          | *8 / 1 / 2    |
|---|------------|-------------|----------|---------------|
| ST. CLAIR RIVER TRANSECT 6 STATION 3                |            | STATION BAD | MI       | 0             |
| TAXON   | <b>5</b> – | 26          | 200      | NO./SQ. METER |
| CNIDARIA<br>HYDRA                                   | 12913      | 1992 2662   | 2662     | 120978        |
| ALL CNIDARIA  |            |             |          | 120978        |
| RHABDOCOELA   | 6          | 0           | 0        | 21            |
| NEMERTINEA  | 0          | 0           | 4        | 28            |
| NEMATODA  | 0          | 4           | 48       | 365           |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA ELONGATA | 0          |             | •        |               |
| PISCICOLIDAE PISCICOLA ALL HIRUDINEA                | •          | -           | 0        | 4             |
| DLIGOCHAETA<br>Nais                                 | 56         | m           | 37       |               |
| SPIROSPERMA   | 0          | 17          | -        |               |
| STYLARIA  | 155        | 97          | 73       |               |
| OTHER<br>ALL OLIGOCHAETA                            | 80         | 72          | 207      | 5620          |
| CLADOCERA<br>Boshina                                | <b>6</b>   | 0           | <b>5</b> |               |
| DAPINIA   | 9          | 18          | -        |               |
| HOLOPEDIUM  | 48         | 0           | 0        |               |
| ALL CLADOCERA                                       |            |             |          | 1260          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |      |             |     | 10/17/84      |
|--|------|-------------|-----|---------------|
| TRANSECT 6 STATION 3 (CONT.D)              | GRA  | GRAB COUNTS | NTS |               |
| TAXON                                      | -    | 7           | 3   | NO./SQ. METER |
| COPEPODA<br>DIAPTOMUS                      | 0    | 0           | -   |               |
| LIMMOCALANUS                               | 0    | 0           | -   |               |
| ZESOCYCLOPS                                | -    | 0           | 0   |               |
| ALL COPEPODA                               |      |             |     | 21            |
| DSTRACODA                                  | 7    | -           | 12  | 138           |
| AMPHIPODA<br>Gammarus                      | 67   | 2           | 9   |               |
| HYALELLA AZTECA<br>                        | 7    | 0           | 7   | 969           |
| TERRESTRIAL INSECT                         | -    | -           | 0   | 7             |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONDMIDAE | ဝမ္တ | 0.20        | 153 | 2569          |
| EMPIDIDAE<br>All diptera                   |      | >           | N   | 2589          |
| EPHEMEROPTERA<br>Caenidae<br>Caenis        | ð    | 8           | 4   |               |
| EPHEMERIDAE<br>HEXAGENIA                   | 253  | 316         | 408 |               |
| HEPTAGENTIDAE<br>STENDNEMA                 | 0    | 0           | •   |               |
| ALL EPHEMEROPTERA                          |      |             |     | 6845          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |              |             |    | 10/17/84      |
|---------------------------------------|--------------|-------------|----|---------------|
| TRANSECT 6 STATION 3 (CONT'D)         | 9400         | Ž           | Ę  |               |
| TAXON                                 | 1 2 3        | 5 ~         | 20 | NO./SQ. METER |
| TRICHOPTERA<br>BRACHYCENTRIDAE        | <br>         | !<br>!<br>! |    |               |
| BRACHYCENTRUS                         | 0            | -           | 0  |               |
| MICRASEMA                             | ~            | 0           | 0  |               |
| HYDROPSYCHIDAE<br>Fuel matabeteus     | •            | •           | •  |               |
|                                       | -            | -           | -  |               |
| HYDROPSYCHE                           | <b>B</b>     | <b>6</b>    | 60 |               |
| LEPTOCERIDAE                          |              |             |    |               |
| CERACLEA                              | <del>5</del> | 0           | 0  |               |
| MYSTACIDES                            | -            | 0           | 0  |               |
| OFCETIS                               | c            | ·           | c  |               |
| 9 5 9 5 9 7 9 7                       | )            | •           | •  |               |
| SETODES                               | 0            | 8           | 0  |               |
| POLYCENTROPODIDAE                     |              |             |    |               |
| NEURECLIPSIS                          | 0            | -           | ო  |               |
| ALL TRICHOPTERA                       |              |             |    | 289           |
| ACARINA                               | 0            | -           | 8  | 21            |
| GASTROPOOA                            |              |             |    |               |
| AMNICOLA                              | ∞            | 6           | 12 |               |
| ELIMIA LIVESCENS                      | e            | •           | 0  |               |
|                                       | , ,          | . ,         | 1  |               |
| GYRAULUS                              | 8            | 0           | 0  |               |
| PHYSA                                 | -            | 0           | 0  |               |
|                                       |              |             |    | į             |
| ALL GASTRUPODA                        |              |             |    | 262           |
| PELECYPODA                            |              |             |    |               |
| PISIDIUM                              | 8            | 7           | -  | 69            |
|                                       |              |             |    |               |
| ALL PELECYPODA                        |              |             |    | 69            |

| MACROZDOBENTHOS PONAR GRAB COUNT DATA                |           |      |             | 10/17/84                   |
|--|-----------|------|-------------|----------------------------|
| ST. CLAIR RIVER TRANSECT 7 STATION 1 TAXON           | - 8       | 8 CG | GRAB COUNTS | ESTIMATED<br>ND./Sq. METER |
| CNIDARIA<br>HYDRA                                    | 4615      | 5274 | 5274 4220   | 97164                      |
| ALL CNIDARIA   |           |      |             | 97164                      |
| RHABDOCDELA  | 71        | 8    | 0           | 2 <b>8</b>                 |
| TRICLADIDA   | 46        | 9    | ø           | 386                        |
| NEMERA INEA  | -         | -    | 0           | 7                          |
| NEMATODA   | 7         | 0    | -           | 21                         |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>BATTACOGDELLA PHALERA | -         | 0    | •           |                            |
| PISCICOLIDAE PISCICOLA MILNERI                       | *         | 0    | -           |                            |
| OTHER<br>ALL HIRUDINEA                               | 0         | 0    | -           | <b>58</b>                  |
| OLIGOCHAETA<br>Nais                                  | 148       | 12   | <b>9</b>    |                            |
| SPIROSPERMA  | 83        | 36   | 8           |                            |
| STYLARIA   | 353       | 307  | 375         |                            |
| 201100 CONT.   | 1310 1286 | 1286 | 844         | 24103                      |
| ALL ULIGUCHAR!A                                      |           |      |             |                            |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |           |             |          | 10/17/84   |
|---------------------------------------|-----------|-------------|----------|--|
| TRANSECT 7 STATION 1 (CONT'D)         |           | į           | !        | ,  |
|                                       | GRAE<br>1 | GRAB COUNTS | S E      | ESTIMATED<br>NO./SQ. METER   |
| CLADOCERA<br>BOSMINA                  | 21        | -           | w        | 2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| DAPHNIA                               | 0         | 9           | -        |  |
| HOLOPEDIUM                            | <b>5</b>  | 9           | 11       |  |
| ALL CLADOCERA                         |           |             |          | 199  |
| COPEPODA<br>Diaptomus                 | 8         | 0           | <b>5</b> |  |
| EPISHURA LACUSTRIS                    | -         | 0           | 0        |  |
| PARACYCLOPS                           | 0         | 0           | 16       |  |
| ALL COPEPODA                          |           |             |          | 241  |
| OSTRACODA                             | 0         | М           | 0        | <b>‡</b>   |
| AMPHIPODA<br>Gammarus                 | 428       | 162         | 90       |  |
| HYALELLA AZTECA                       | î.        | N)          | 7        |  |
| ALL AMPHIPODA                         |           |             |          | 2000   |
| TERRESTRIAL INSECT                    | •         | -           | 0        |  |
| DIPTERA<br>CHIRONOMIDAE               | 274       | 125         | <u> </u> | 3540   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |              |              |          | 10/17/84                   |
|---------------------------------------|--------------|--------------|----------|----------------------------|
| TRANSECT 7 STATION 1 (CONT'D) TAXON   | GR.          | GRAB COUNTS  | SE<br>3  | ESTIMATED<br>NO./SQ. METER |
| EPHEMEROPTERA                         |              | •            |          |                            |
| CAENIDAE                              | 8            | -            | (7)      |                            |
|                                       | 3            | •            | •        |                            |
| EPHEMERIDAE<br>HEXAGENIA              | ;            | 23           | 80       |                            |
|                                       |              |              |          |                            |
| BAETISCIDAE<br>BAETISCA               | 0            | 0            | -        |                            |
|                                       |              |              |          |                            |
| TEP I AGENT LUAGE STENONEMA           | 0            | 0            | -        |                            |
| ALL EPHEMEROPTERA                     |              |              |          | 764                        |
| TRICHOPTERA                           |              |              |          |                            |
| BRACHYCENTRIDAE                       | (            | •            | •        |                            |
| BRACHYCENTRUS                         | 10           | -            | 7)       |                            |
| HYDROPSYCHIDAE                        |              |              |          |                            |
| CHEUMATOPSYCHE                        | -            | n            | 0        |                            |
| HYDROPSYCHE                           | ø            | ĸ            | •        |                            |
| 1                                     |              |              |          |                            |
| CERACLEA                              | -            | 10           | 0        |                            |
|                                       |              |              |          |                            |
| NEURECLIPSIS                          | <b>6</b>     | 0            | <b>6</b> |                            |
| ALL TRICHOPTERA                       |              |              |          | 386                        |
| ACARINA                               | -            | -            | ın       |                            |
| GASTROPODA                            |              |              |          |                            |
| AMNICOLA                              | 100          | <del>-</del> | Ø        |                            |
| ELIMIA LIVESCENS                      | 12           | 17           | φ        |                            |
| GYRAULUS                              | 25           | Ξ            | -        |                            |
| PHYSA                                 | <del>*</del> | 33           | 6        |                            |
| VALVATA TRICARINATA                   | 0            | m            | 0        |                            |
| 1                                     |              |              |          | 200                        |
| ALL GASTROPODA                        |              |              |          | 3                          |

 MACROZOOBENTHOS PONAR GRAB COUNT DATA
 10/17/84

 TRANSECT 7 STATION 1 (CONT'D)
 GRAB COUNTS
 ESTIMATED

 TAXON
 1 2 3 NO./Sq. METER

 PELECYPODA
 40 18 17

 SPHAERIUM
 2 1 0

 ALL SPHAERIUM
 2 1 0

 ALL SPHAERIUM
 2 1 0

 ALL PELECYPODA
 537

 ALL PELECYPODA
 537

B-547

| TRANSECT 7 STATION 2  GRAB COUNTS  1 2376 6668 6377  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | MACROZODBENTHOS PONAR GRAB COUNT DATA |       |               |            | •                       |
|---|---------------------------------------|-------|---------------|------------|-------------------------|
| DARIA 1750 12376 6668 6377 1750 1750 12376 6668 6377 1750 1750 1750 1750 1750 1750 1750 1750  |                                       | ag -  | 8<br>20<br>20 | NTS<br>3   | ESTIMATED NO./SQ. METER |
| DARIA  12376 6668 6377 1750  ELA  DA  1 1 0  1750  1750  ELA  1 1 0  17 1 33 3  1 18 35 | TAXON                                 |       |               |            |                         |
| 1A 1 1 0 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1 1 1 1 0 1  | CNIDARIA                              | 12376 | 8999          | 6377       | 175066                  |
| 1 1 0 17 1 33 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3   | ALBARINA                              |       |               |            | 175066                  |
| 1 1 1 33 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3  | BHABDOCOELA                           | -     | -             | 0          | 7                       |
| 17 1 33 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3   | TRICLADIDA                            | -     | -             | 0          | <b>=</b>                |
| TUM  1 18 35 3  1 18 35 3  21 31 26  1952 909 1008  300  10 17 0 1  10 17 0 1  10 17 0 1  | NEMERTINEA                            | 17    | -             | 33         | 186                     |
| 102 32 49  21 31 26  138 64 146  1952 909 1008  300  14AETA  16 18 0  17 0 1  0 17 0  | NEMATODA                              | -     | •             | 92         | 372                     |
| ERMA  136 64 146  1952 909 1008  0CHAETA  16 18 0  17 0 1  0 17 0   | OLIGOCHAETA<br>Nais                   | 102   | 32            | <b>4</b>   |                         |
| 136 64 146  1952 909 1008  300  101 18 0  17 0 1  100  100  100  100  100  100  | SPIROSPERMA                           | 21    | E             | <b>5</b> 6 |                         |
| 1952 909 1008 300 DCHAETA 16 18 0 17 0 1 17 0 1 0 17 0 1 0 17 0 1 0 17 | STVIABIA                              | 138   | 3             | 146        |                         |
| 16 18 0 17 0 1 0 17 0 17 0 0 17 0 0 00 17 0 00 00 00 00 00 00 00 00 00 00 00 00   | OTHER<br>ALL OLIGOCHAETA              | 1952  | 8             | <u>00</u>  | 30838                   |
| 1 0 1 0 0 0 11 0  | CLADOCERA                             | 16    | 5             | 0          |                         |
| 0 11 0  | TINIGE C                              | 17    | 0             | -          |                         |
|   |                                       | ٥     | •             | 0          |                         |
|   | ALL CLADOCERA                         |       |               |            | 475                     |

| Ç                |  |
|------------------|--|
| 6                |  |
| ¥                |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
| 2                |  |
| DATA             |  |
|                  |  |
| PONAR GRAB COUNT |  |
| 5                |  |
| Ö                |  |
| _                |  |
| 9                |  |
| œ                |  |
| G                |  |
| Œ                |  |
| ₹                |  |
| 5                |  |
| _                |  |
| 8                |  |
| Ξ                |  |
| Ξ                |  |
| 3                |  |
| 32008            |  |
| 0                |  |
| Ñ                |  |
| CROZOOBENTHOS    |  |

| STATION 2 (CONT'D)  GRAB COUNTS 1 2 3 1 2 3 1 1 0 0 1 16 1 0 0 1 16 1 0 0 0 1 10 2 3 1 1 0 0 1 10 2 3 3 117 88 76 4 AZTECA 7 1 5 1 1 0 1 0   | ALECTICAL TOTAL GRAND COLORS | # 140 MOO |     |             | 10/11/04 |
|--|------------------------------|-----------|-----|-------------|----------|
| A DAUS  A DAUS  DA D   | TRANSECT 7 STATION 2 (CONT   |           | !   | !           |          |
| US<br>PODA<br>A AZTECA<br>117 88 76<br>A AZTECA<br>1DAE<br>1PODA<br>1DAE<br>18 19 158 38<br>E 1 1 0<br>ERA<br>TERA<br>11 5 6<br>11 5 6<br>11 5 6<br>11 5 6<br>11 5 6   |                              |           | KAB | 2 3         | 2        |
| US 0 1 16  | !<br>!<br>!                  |           |     | ,<br>,<br>, |          |
| FODA  A AZTECA  A AZTECA  117 88 76  A AZTECA  1100A  1007 158 39  ERA  TERA  TERA  11 5 6  11 5 6  A O O  1110AE  A O O  1110AE   | DIAPTONUS                    | 0         |     | 1 16        | 117      |
| S  | ALL COPEPODA                 |           |     |             | 117      |
| LLA AZTECA  LLA AZTECA  PHIPODA  PHIPODA  PHIPODA  PHIPODA  PERA  POPTERA   | OSTRACODA                    | •         |     |             | •        |
| HLPODA  PHIPODA  PHIP | AMPHI PODA                   |           |     |             |          |
| LLA AZTECA 7 1 5 PHIPODA 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | GAIMIARUS                    | 117       |     |             |          |
| PHIPODA  PHIPODA  DAE  DAE  DAE  PTERA  OPTERA  OPTERA  CDAE  CIDAE  CIDAE  SCA  CIDAE  CIDAE | HYALELLA AZTECA              | 1         |     | <b>-</b>    |          |
| DMIDAE 197 156 DAE 1 1 PTERA 1 1 1 OPTERA 2 1 1 5 ENIDAE 67 37 CIDAE 67 37 CID | ALL AMPHIPODA                |           |     |             | 2025     |
| DMIDAE DAE DAE DAE DAE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | DIPTERA                      |           |     |             |          |
|  | CHIRONDAL                    | 101       | •   |             | 2713     |
| n 76 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6   | ALL DIPTERA                  | -         |     | -           | 2727     |
| 11 55 11 55 12 12 12 12 12 12 12 12 12 12 12 12 12   | EPHEMEROPTERA                |           |     |             |          |
| 7  | CAENIDAE                     | *         |     | _           |          |
| 67 37  |                              | =         |     |             |          |
| 67 37 4  | EPHEMERIDAE                  |           |     |             |          |
| 0 0  | HEXADENIA                    | 61        |     | 7 17        |          |
| 0 0  | BAETISCIDAE                  |           |     |             |          |
| •  | BAETISCA                     | •         |     | -           |          |
| •  | HEPTAGENIDAE                 |           |     |             |          |
| _  | STENONEMA                    | -         |     | •           |          |
| A I SOURCE ON THE SOURCE OF TH | A11 FOLITHFOODTFOA           |           |     |             | 1026     |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |            |       |             | 10/17/84                |
|---------------------------------------|------------|-------|-------------|-------------------------|
| TRANSECT 7 STATION 2 (CONT'D)         |            |       |             |                         |
| TAXON                                 | <u>e</u> – | .AB Ċ | GRAB COUNTS | ESTIMATED NO./SQ. METER |
| TRICHOPTERA                           |            |       |             |                         |
| BRACHYCENTRUS                         | 8          | 0     | n           |                         |
| MICRASENA                             | 0          | -     | c           |                         |
| HYDROPSYCHIDAE                        | 1          | •     | •           |                         |
| CHEUMATOPSYCHE                        | 6          | 10    | a           |                         |
| HYDROPSYCHE                           | Œ          | ď     | ç           |                         |
| LEPTOCERIDAR                          | •          | •     | 2           |                         |
| CERACLEA                              | e          | •     | c           |                         |
|                                       | )          | •     | •           |                         |
|                                       | 64         | 0     | 0           |                         |
| OECETIS                               | 0          | -     | -           |                         |
| POLYCENTROPOUTOAE                     |            |       |             |                         |
| NEURECLIPSIS                          | •          | c     | •           |                         |
| ALL TRICHOPTERA                       | •          | •     | •           | •                       |
|                                       |            |       |             | ***                     |
| ACARINA                               | ~          | 0     | 0           | 7                       |
| GASTROPODA                            |            |       |             |                         |
| AMICOLA                               | 9          | 24    | :           |                         |
|                                       | •          | 4     | o           |                         |
|                                       |            |       | ,           |                         |
|                                       | <b>\$</b>  | -     | ო           |                         |
| PHYSA                                 | 10         | 6     | 4           |                         |
| ALL GASTROPODA                        |            |       |             | r d                     |
| PELECYPODA                            |            |       |             | }                       |
| SPHAERIIDAE                           |            |       |             |                         |
|                                       | 63         | 22    | 32          |                         |
| SPHAERIUM                             | -          | •     | -           |                         |
| ALL SOMAFOTTOAR                       |            |       |             |                         |
| ALL PELECYPODA                        |            |       |             | 60 cc                   |
|                                       |            |       |             |                         |

| R RIVER TRANSECT 7 STATION 3  GRAB COUNTS  1 2 3  1 2 3  DARIA  ELA  DA  EA  ETA  O 0 1 1  DERMA  O 21 0  1 1 2  51 73 166  51 73 16 | MACRUZOOBENTHOS PONAR GRAB COUNT DATA | DATA           |        |       | 10/17/84      |
|--|---------------------------------------|----------------|--------|-------|---------------|
| 6352 8586 4997  ELA  DARIA  ELA  DA  DA  DA  DA  DA  DA  DA  GOCHAETA  DOCERA  GOCHAE  DA  GOCHAE  TA  TA  TA  TA  TA  TA  TA  TA  TA  |                                       | 6              | ZAB CC | NINTS | FSTIMATED     |
| ELA  ELA  DA  DA  ELA  DA  DA  DA  DA  DA  DA  DA  DA  DA  | TAXON                                 | i <del>-</del> | ~      | e     | NO./SO. METER |
| A  | ONIDARIA<br>Hydra                     | 6352           | 8586   | 4997  | 137286        |
| A 0 1 1 2 51 73 166 A 0 0 17 PMA 0 21 0 17 CHAETA 17 34 32 16 11 11 12 11 11 11 11 11 11 11 11 11 11   | ALL CNIDARIA                          |                | •      |       | 137286        |
| A  | 2HABDDCDELA                           | •              | -      | -     | 4             |
| A  | FRICLADIDA                            | •              | 0      | -     | 7             |
| ETA 0 0 17 PERMA 0 21 0  1A 0 21 0  1A 0 21 0  57 73 166  A 17 34 50  1 48 2  1 1 48 2  1 1 48 2  1 1 48 2  1 1 48 2  1 1 48 2   | VEMERTINEA                            | -              | -      | 8     | 28            |
| FRMA  O 21 O  A  A  B1 64 50  S71 730 681  11 48 2  11 48 2  11 48 2  11 14 16  11 14  | NEMATODA                              | œ              | 73     | 166   | 1997          |
| ERMA  A  A  571 730 681 11  OCHAETA  1 48 2  1 48 2  1 10M  OCERA  | DLIGOCHAETA<br>Mais                   | 0              | 0      | 1     |               |
| A 81 64 50 A 571 730 681 11 OCHAETA 17 34 32 1 48 2 1UM 0 34 16  | SPIROSPERMA                           | 0              | 21     | 0     |               |
| 571 730 681<br>17 34 32<br>1 48 2<br>0 34 16   | STYLARIA                              | <b>60</b>      | 64     | 90    |               |
| 17 34 32<br>1 48 2<br>1UM 0 34 16  | OTHER<br>ALL OLIGOCHAETA              | 571            |        |       | 15323         |
| 1 48 2 0 34 16   | CLADOCERA<br>BOSMINA                  | 11             |        | 32    |               |
| 0 34 16  | DAPHNIA                               | -              | 48     | 8     |               |
|  | HOLOPEDIUM                            | •              |        | 16    |               |
|  | ALL CLADOCERA                         |                |        |       | 1267          |

| TRANSECT 7 STATION 3 (CONT'D)  GRAB COUNTS  TAXON  COPEDODA  OLIAPTOMUS  ALL COPEDODA  AMMARIUS  ALL AMPHIPODA  ALL AMPHIPODA  CLANICARE ROLLA  CLELLA AZTECA  ALL AMPHIPODA  CLELLA AZTECA  ALL AMPHIPODA  CLELLA AMPHIPODA  CLELLA AZTECA  ALL AMPHIPODA  CLENICAR CLELLA  CLENICAR CLELLA  ALL DIPTERA  CLENICAR CLELLA  ALL DIPTERA  ALL | MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |          |            | 10/17/84      |
|--|---------------------------------------|-----|----------|------------|---------------|
| A MOL / SG. 1 117 117 117 117 117 117 117 117 117  |                                       | 900 | Š        | 7          | ECTIMATED     |
| MUS  DMUS  DA  PEPODA  BA  LLA AZTECA  LLA AZTECA  DMIDAE  DMIDAE  DMIDAE  PHIPODA  PHIPODA  DMIDAE  DMIDAE  PHIPODA  ENIMA  CIDAE  SCA  PIDAE  DMIDAE  B 1 10  CIDAE  ENIMA  PHIPODA  TO DMIDAE  TO D |                                       |     | 8        |            | NO./SQ. METER |
| DA PEPODA  DA AZTECA  LLA AZTECA  PHIPODA  PHIPO |                                       |     | •        | •          |               |
| PEPODA  DA  FULA AZTECA  LLA AZTECA  LLA AZTECA  PHIPODA  PHIPODA  DAE  PTERA  OPTERA  AE  SCA  CIDAE  ENIDAE  ENIDAE  PLOME  B 1 10  CIDAE  ENIDAE  PLOME  PLOME  CIDAE  PLOME   |                                       | 2   | >        | -          | <u> </u>      |
| PHIPODA  PHIPODA  PHIPODA  PHIPODA  DMIDAE  DMIDAE  PTERA  OPTERA  OPTERA  CIDAE  ENIA  EN | ALL COPEPODA                          |     |          |            | 117           |
| PUS LLA AZTECA LLA AZTECA LLA AZTECA LLA AZTECA  LLA AZTECA  2 1 1 PHIPODA PHIPODA  ONIDAE  ONIDAE ENIA CIDAE ENIA CIDAE ENIA ENITORE  PIDAE PID | AMPHIPODA                             |     |          |            |               |
| LLA AZTECA  LLA AZTECA  LLA AZTECA  PHIPODA  PHIPODA  DMIDAE  DAE  DAE  OMIDAE  OMIDAE  OMIDAE  A 1 10  ENIA  ENIA  ENIA  ENIA  ENIA  FINA  PIDAE  PIDAE  OMYTHODES  HEMBROPTERA  1 0 0  | GAIMMARUS                             | 41  | <b>6</b> | 35         |               |
| PHIPODA  PHIPODA  DAIDAE  DAE  PTERA  OPTERA  AE  S  S  TIDAE  ENITORE  ENITORE  ENITORE  ENITORE  PIDAE  PRIDAE  TO 0   |                                       | 8   | -        | -          |               |
| DMIDAE  DAE  DAE  PTERA  PTERA  OPTERA  OPTERA  AE  S  | ALL AMPHIPODA                         |     |          |            | 1219          |
| 10 24 13<br>2 0 3<br>43 2 28<br>13 20 11<br>13 20 11<br>2 8 17<br>0ES 1 0 0  | DIPTERA                               |     |          |            |               |
| 43 2 28<br>43 2 28<br>13 20 11<br>8 1 10<br>8 1 10<br>8 1 10<br>PTERA  | CHIRONDMIDAE                          | ō.  | 75       | <u>ٿ</u> . | 324           |
| 43 2 28<br>13 20 11<br>15 20 11<br>10 10<br>10 0 0 0 0 0 0 0 0 0 0 0 0 0   | EMPIDIDAE<br>All Diptera              |     | 5        | ,          | 358           |
| DAE  1.1  1.1  1.1  1.1  1.1  1.1  1.1  1  | EPHEMEROPTERA                         |     |          |            |               |
| MERIDAE  AGENIA  1 SCIDAE  | CAENIDAE                              | 43  | 8        | 28         |               |
| MERIDAE  AGENIA  13 20 11  ISCIDAE  ISCIDAE  TISCA  AGENIDAE  AGENIDAE  CHONYHODES  10 0   |                                       | !   | •        | ì          |               |
| AGENIA  15.CIDAE  15.CIDAE  TISCA  AGENIDAE  NONEMA  2 8 17  CHORYTHODES  1 0 0  CHORYTHODES  1 0 0  | EPHEMERIDAE                           | ;   | 1        | ;          |               |
| ISCIDAE TISCA AGENIDAE AGENIDAE ROPIDAE CHORYTHODES 1 0 0 CHORYTHODES EPHEMEROPTERA  | TEXAGENIA                             | 5   | 2        | =          |               |
| TISCA  | BAETISCIDAE                           |     |          |            |               |
| AGENIIDAE AGENIIDAE NONEMA 2 8 17 ROPIDAE CHDRYTHODES 1 0 0  | BAETISCA                              | 60  | -        | 9          |               |
| NONEMA 2 B 17 NONEMA 2 B 17 NONEMA 2 B 17 NOTION 1 0 0 CHORYTHODES 1 0 0   |                                       |     |          |            |               |
| ROPIDAE ROPIDAE 1 0 0 CHORYTHODES CHORYTHODES CHORYTHODES CHORYTHODES  | STENONEMA                             | N   | •        | 11         |               |
| ROP 1DAE<br>CHORY THODES 1 0 0   |                                       |     |          |            |               |
| CHORYTHODES 1 0 0  | AMETROPIDAE                           |     | ,        | ,          |               |
| EPHEMEROPTERA  | TRICHORYTHOOES                        | -   | 0        | 0          |               |
|  | ALL EPHEMEROPTERA                     |     |          |            | 1129          |

| TRANSECT 7 STATION 3 (CONT.D)     | GRAB  | 200      | STA  | ESTIMATED   |
|-----------------------------------|-------|----------|------|---|
| TAXON                             | 1 2 3 | 7        | , m  | NO./SO. METER                                       |
| TE                                | )<br> |          | <br> | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| BRACHYCENTRUS                     | 7     | N)       | GS.  |   |
| 4                                 | 8     | 0        | -    |   |
| HYDROPSYCHIDAE                    |       | 4        | į    |   |
| CHEUMATOPSYCHE                    | 23    | on .     | 7    |   |
| HYDROPSYCHE                       | 21    | 17       | 91   |   |
| LEPTOCERIDAE                      |       |          |      |   |
| CERACLEA                          | -     | 4        | 4    |   |
| MYSTACIOES                        | c     | ď        | c    |   |
|                                   | •     | •        | 4    |   |
| OECETIS                           | 0     | 0        | 8    |   |
|                                   |       |          |      |   |
| SETODES                           | 0     | -        | 0    |   |
| POLYCENTROPODIDAE                 |       |          |      |   |
| NEURECL IPSIS                     | 12    | ō        | 5    |   |
| ALL TRICHOPTERA                   |       |          |      | 1343  |
| ACARINA                           | 8     | 4        | 4    | 69  |
| GASTROPODA                        |       |          |      | ٠   |
| AMNICOLA                          | -     | ო        | 11   |   |
| ELIMIA LIVESCENS                  | 0     | -        | -    |   |
|                                   |       |          |      |   |
| PHYSA                             | -     | <b>6</b> | -    |   |
| ALL GASTROPODA                    |       |          |      | 193   |
| PELECYPODA                        |       |          |      |   |
| SPHAERIIDAE                       |       |          |      |   |
| PISIDIUM                          | 8     | 0        | 0    |   |
| SPHAERIUM                         | 0     | -        | 0    |   |
|                                   | •     |          | •    |   |
| ALL SPHAERIIDAE<br>Ali Pelecypuna |       |          |      | 21  |
|                                   |       |          |      |   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |          |             |        | 10/17/84      |
|---|----------|-------------|--------|---------------|
| ST. CLAIR RIVER TRANSECT 8 STATION        | -        | SPAR COUNTS | ATM.   | ESTIMATED     |
|   | -        | 7           |        | NO./SQ. METER |
|   |          | •           | ,      | ,             |
| SPONGILLA                                 | +        | 0           | 0      | ÷             |
| ALL PORIFERA                              |          |             |        | 0             |
| CNIDARIA<br>Hydra                         | <b>8</b> | 24          | 5      | 920           |
| ALL CNIDARIA                              |          |             |        | 950           |
| TRICLADIDA                                | NO.      | ĸ           | 0      | 69            |
| NEMERTINEA                                | 0        | ო           | 0      | 21            |
| NEMATODA                                  | 96       | 116         | 89     | 1859          |
| HIRUDINEA<br>ERPOBDELLIDAE                | -        | 0           | 8      |               |
| GLOSSIPHONIDAE<br>GLOSSIPHONIA COMPLANATA | -        | 0           | 0      |               |
| ALL HIRUDINEA                             | ,        |             |        | 28            |
| OLIGOCHAETA                               | i        | į           | ;      |               |
| SIV                                       | 24       | 35          | e<br>e |               |
| SPIROSPERMA                               | 265      | 182         | 219    |               |
| STYLARIA                                  | 23       | 0           | 0      |               |
| 03110                                     | 60       | 75          | 11     |               |
| A:L ULIGOCHAETA                           | }        | <u>:</u>    | •      | 7155          |

| GRAB COUNTS ESTIMATED TO SELVICE  | TDANSECT & STATION 4 (CONT.D.)                  |            |       |           |                            |
|--|---|------------|-------|-----------|----------------------------|
| ETA UNKIA SPECIOSA  UNKIA SPECIOSA  LYCHAETA  RA  RA  RA  RA  RA  RA  RA  RA  RA   | •   | <b>3</b> - | AB CO | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| LYCHAETA  LYCHAETA  RA  RA  NA  NA  NA  NA  NA  NA  NA  LIA  EDIUM  BEDIUM  BEDIUM  BEDIUM  CYCLOPS  C | POLYCHAETA<br>Manayunkia Speciosa               | 893        | 1193  | 961       | 20984                      |
| NA N   | ALL POLYCHAETA                                  |            |       |           | 20884                      |
| EDIUM  LA ADDCERA  AD | CLADOCERA                                       | •          | •     | ,         |                            |
| ### 1 1 3 3 6 6 10 1 1 1 3 3 6 1 3 3 3 3 3 3 3 3 3 3 3 3 3   |   | •          | >     | N         |                            |
| ADDOCERA ADD | DAPHNIA   | -          | -     | m         |                            |
| ADDCERA ADDCER | 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1         |            |       |           |                            |
| ADDOCERA  AND ADDOCERA  AND ADDOCERA  CYCLOPS  C | HOLOPEDIUM                                      | en         | n     | 0         |                            |
| URA LACUSTRIS  CYCLOPS  CYCLOP | ALL CLADDCERA                                   |            |       |           | 96                         |
| URA LACUSTRIS  CYCLOPS  CYCLOP | COPEPODA  |            |       |           |                            |
| CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  CYCLOPS  DA  BDA  TRUS  LLA AZTECA  4 0 3  CHIPODA  US  DPGONIDAE  196 113 148  197 13 148  198 113 148  198 113 148  198 113 148  198 113 148  198 113 148  198 113 148   | EPISHURA LACUSTRIS                              | 0          | 0     | -         |                            |
| CYCLOPS  CYCLOPS  CYCLOPS  DA  BA  BA  BA  BA  BA  BA  BA  BA  BA  |   |            |       |           |                            |
| PEPODA  DA  RUS  LLA AZTECA  LLA AZTECA  PHIPODA  US  DPODDA  DOMIDAE  196 113 148  4 0 3  9 1  197 148  198 102 188   | MACROCYCLOPS                                    | 0          | 9     | 0         |                            |
| PA   | ALL COPEPODA                                    |            |       |           | 117                        |
| RUS  | AMPHIPODA                                       |            |       |           |                            |
| LLA AZTECA 4 0 3 LLA AZTECA 4 0 3 PHIPODA  US  | GAMMARUS  | 196        | 113   | 148       |                            |
| LLA AZTECA  4 0 3  | 4 5 6 5 7 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |            |       |           |                            |
| PHIPODA  US  OPODA  POGONIDAE  0 0 1  0 0 1  0 0 1  0 0 1  0 0 1  0 0 1  0 0 1   | HYALELLA AZTECA                                 | 4          | 0     | <b>6</b>  |                            |
| US OPODA POGONIDAE 196 102 188   | ALL AMPHIPODA                                   |            |       |           | 3195                       |
| US 3 0 3   | ISOPODA   |            |       |           |                            |
| DOGONIDAE 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0  | ASELLUS   | 6          | 0     | 6         | 4                          |
| OGONIDAE 0 0 1<br>DMIDAE 196 102 188   | ALL ISOPODA                                     |            |       |           | -4                         |
| 0 0 1<br>196 102 188   | DIPTERA   |            |       |           |                            |
| 196 102 188  | CERATOPOGONIDAE                                 | 0          | 0     | -         |                            |
|  | CHIRONOMIDAE                                    | 196        | 102   | 188       | 3347                       |

| ## STATION 1 (CONT'D)  GRAB COUNTS  FRA   157 54 121  AA  IDAE  AA  HIDAE  O 0 1 7  IDAE  AHIDAE  OFFERA  OFFE | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |                  |             | 10/17/84                   |
|--|---|------------|------------------|-------------|----------------------------|
| #READ COUNTS  ### 157 54 121  ### 76 17 70  ### 100  ###  |   |            |                  |             |                            |
| S  | TAXON                                   | <u>8</u> ~ | 8<br>8<br>8<br>8 | S E         | ESTIMATED<br>NO./SQ. METER |
| 157 54 121  12   |   |            | !<br>!           | !<br>!<br>! | !                          |
| AFE  AFE  AFE  AFE  AFE  AFE  AFE  AFE   | CAENIS                                  | 157        | 4                | 121         |                            |
| TO T   | EPHEMERIDAE                             | i          | !                |             |                            |
| IDAE  MA  WERDPTERA  MA  WATURAE  COMBIDIAE  | TEXAGENIA                               | 16         | 7                | 6           |                            |
| EROPTERA  EROPTERA  ITA  PTERA  HIDAE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  C  | HEPTAGENIIDAE                           |            |                  |             |                            |
| ## REPOPTERA 9436    IA  | STENONEMA                               | 0          | 0                | -           |                            |
| MA HIDAE CHE CHE CHE CHE CHE CHE CHE CHE CHE CH  | ALL EPHEMEROPTERA                       |            |                  |             | 3436                       |
| PTERA  | COLEOPTERA                              |            |                  |             |                            |
| PTERA  HA HADAE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  C  | ELMIDAE<br>Dubiraphia                   | c          | c                | -           |                            |
| A HATOAE  CHE  CHE  CHE  CHE  CHE  CHE  CHE  C   |   | >          | >                | -           |                            |
| ES 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0   | ALL COLEOPTERA                          |            |                  |             | 7                          |
| H7DAE CHE CHE DAE DAE  OPODIDAE  OPODIDAE  OPOTERA  IVESCENS  O 1 2 2 0 0 1 2 0 0 1 76 1 2 0 21 1 2 0 21 1 0 0 1 1 0 0   | TRICHOPTERA                             |            |                  |             |                            |
| DAE  DAE  DAE  OPODIDAE  ROPUS  IVESCENS  O 1 2  2 0 0  1 2 0  1 2 0  21   | HYDROPSYCHIDAE                          |            |                  |             |                            |
| DAE  0 1 2  2 0 0  1 OPODIDAE  ROPUS  0 3 1  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 2 0 21  1 0 0 0   | HYDROPSYCHE                             | 0          | -                | 0           |                            |
| ES   | LEPTOCERIDAE                            |            |                  |             |                            |
| 1 2 0 0 1 1 2 0 0 1 1 2 0 0 1 1 2 0 1 1 2 0 21 1 2 0 21 1 2 0 21 1 2 0 21 1 2 0 21 1 2 0 21 1 2 0 21 1 0 0 0 0   | OECETIS                                 | 0          | -                | 8           |                            |
| ES   | SETODES                                 | 6          | C                | c           |                            |
| #ES 0 0 1  |   | •          | •                | •           |                            |
| 00-3-1 TGPUS  00-3-1 TGPUS  10-2-1 TGPUS  10-3-1 TGPUS  10 | TRIAENODES                              | 0          | 0                | -           |                            |
| NOPTERA  OPTERA  1 2 0 21  1VESCENS  10 19 9  1 0 0  6 5 1   | POLYCENTROPOOIDAE                       |            |                  |             |                            |
| 1 2 0 21 1VESCENS 10 19 9 1 0 0 0  | POLYCENTROPUS                           | 0          | 6                | -           |                            |
| 1 2 0  IVESCENS  10 19 9  1 0 0  | ALL TRICHOPTERA                         |            |                  |             |                            |
| 1VESCENS 10 19 9   | ACARINA                                 | -          | ~                | 0           | 21                         |
| 1VESCENS 10 19 9 1 1 0 0 0 1 1 0 0 0 1 1 1 1 1 1   | BASTROPODA                              |            |                  |             |                            |
| MIA LIVESCENS 10 19 9 AULUS 1 0 0  | AMNICOLA                                | 4          | a                | 8           |                            |
| 1 0 0 AULUS SA 6 5 1   | ELIMIA LIVESCENS                        | ō          | 9                | <b>o</b>    |                            |
| AULUS<br>SA 6 5 1  | 1 | •          |                  | ı           |                            |
| 48. A.   | GYRAULUS                                | -          | 0                | 0           |                            |
|  | PHYSA                                   | 9          | 60               | -           |                            |
|  |   |            |                  |             |                            |

 MACROZOGBENTHOS PONAR GRAB COUNT DATA
 10/17/84

 TRANSECT 8 STATION 1 (CONT'D)
 GRAB COUNTS
 ESTIMATED

 TAXON
 1 2 3 NO./50. METER

 PELECYPODA
 25 14 43

 SPHAERIIDAE
 1 4 2

 ALL SPHAERIIDAE
 1 4 2

 ALL SPHAERIIDAE
 613

 ALL PELECYPODA
 613

8-557

i. Li

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | COUNT DATA           |              |             |      | 10/17/84      | /84   |
|---------------------------------------|----------------------|--------------|-------------|------|---------------|-------|
| IR RIVER                              | TRANSECT 8 STATION 2 | S.           | GRAB COUNTS | UNTS | ESTIMATED     | 7E0   |
| TAXON                                 |                      | -            | ~           | က    | NO./SQ. METER | METER |
| CNIDARIA<br>HYDRA                     |                      | 869          | 375         | 191  | 8705          |       |
| ALL CNIDARIA                          |                      |              |             |      | 8705          |       |
| RHABDOCOELA                           |                      | 33           | 43          | 12   | 909           |       |
| TRICLADIDA                            |                      | 22           | 4           | 9    | 248           |       |
| NEMERTINEA                            |                      | 0            | 33          | 0    | 241           |       |
| NEMATODA                              |                      | <del>0</del> | 4           | 11   | 230           |       |
| OLIGOCHAETA<br>Nais                   |                      | 8            | 0           | 11   |               |       |
| SPIROSPERMA                           |                      | 99           | <b>I</b> D  | 9    |               |       |
| STYLARIA                              |                      | 332          | <b>5</b> 66 | 296  |               |       |
| OTHER<br>ALL OLIGOCHAETA              |                      | 222          | <u>~</u>    | 8    | 9779          |       |
| POLYCHAETA<br>Manayunkia speciosa     |                      | 41           | 173         | 119  | 2335          |       |
| ALL POLYCHAETA                        |                      |              |             |      | 2335          |       |

| MACRUZOUBENINGS PUNAR GRAS COUNT UNIA |                |             |            | 48/11/01      |
|---------------------------------------|----------------|-------------|------------|---------------|
| TRANSECT 8 STATION 2 (CONT'D)         | 9              | SDAR COUNTS | Y          | ESTIMATED     |
|                                       | -              | 2           |            | NO./SQ. METER |
| CLADOCERA                             |                |             |            |               |
| BOSMINA                               | -              | 0           | -          |               |
| DAPHNIA                               | -              | 0           | 0          |               |
|                                       | (              | •           | •          |               |
| HOLGPEDIUM                            | <b>5</b> 0     | 10          | <b>3</b> 0 |               |
| ALL CLADOCERA                         |                |             |            | 200           |
| COPEPODA                              |                |             |            |               |
| DIAPTOMUS                             | 0              | •           | 0          |               |
| HARPACTICOIDA                         | 0              | 60          | 0          |               |
| ALL COPEPODA                          |                |             |            | 110           |
| OSTRACODA                             | ٥              | 5           | •          | 06            |
| AMPHI PODA<br>GAMMA PIS               | 60             | 126         | 4          |               |
|                                       | 3              | ?           | !          |               |
| HYALELLA AZTECA                       | 10<br>10       | 9           | 60         |               |
| ALL AMPHIPODA                         |                |             |            | 2527          |
| ISOPODA                               | c              | •           | c          | č             |
| ASELLUS                               | N              | -           | >          | 5             |
| ALL ISOPODA                           |                |             |            | 21            |
| DIPTERA                               | •              | •           | c          |               |
| CERATUPOGONIDAE<br>CHIRONOMIDAE       | , <del>č</del> | 146         | . e        | 2858          |
| ALL DIPTERA                           |                |             |            | 2899          |

| ### COUNTS FORTINATED  ### COUNTS FORTINATED  #### COUNTS FORTINATED  #### COUNTS FORTINATED  #### CAENIDAE  #### CAENIDAE  #### CAENIDAE  #### CAENIDAE  ##### CAENIDAE  ###################################  | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |          |       |      | 10/11/84      |
|--|---|----------|-------|------|---------------|
| PTERA  108 235 180  108 235 180  1 0 0 7  1 0 0 1  0 0 1 0  0 0  0 0 0  0 0 0  0 0 0  0 0 0  0 0 0  0 0 0  0 0 0  0 0 0   | €                                       | œ        | AR CO | STNO | ESTIMATED     |
| 108 235 180<br>108 235 180<br>1 0 0<br>1 0 0<br>1 0 0<br>1 0 0<br>0 1 0<br>0 0 0 0   |   | -        | 2     | 6    | NO./SQ. METER |
| BAE 108 235 180 488  ROPTERA 1 0 0 1  A A A A B B B B B B B B B B B B B B B  |   |          |       |      |               |
| A TOPTERA 108 235 180 489  BOAE  | CAENIDAE                                |          | 9     | č    |               |
| A  | CAENIS                                  | 10<br>77 | 122   | 4    |               |
| 108 235 180  ROPTERA  1 0 0 1  A A A A A A A A A A A A A A A A A A   |   |          |       |      |               |
| AA 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0   | HEXAGENIA                               | <b>5</b> | 235   | 180  |               |
| DAE  A  A  A  E  A  A  1 0 0 1  0 0 1  0 0 2  0 1 0  0 1 0  0 1 0  0 1 0  0 1 0  0 1 0  1 1 0  10 1 0  10 1 0  10 1 0  10 1 0  10 1 0  10 1 0  10 1 0  10 1 0  10 1 0  | ALL EPHEMEROPTERA                       |          |       |      | 4838          |
| DAE  AAE  AAE  1 0 0 1  1 0 0 2  0 1 0  1 0 1 0  1 0 1 0  1 0 1 0  1 0 1 0  1 0 1 0  1 0 1 0  1 1 0  NIDAE  2 3 3  | LEPIDOPTERA                             | -        | 0     | 0    | 1             |
| ES 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0   | TRICHOPTERA                             |          |       |      |               |
| TILA  TRIDAE  TRIDAE  TRIDAE  TRIDAE  TRIDACES  TRIDACES  TRIDADIAE  TRIDAIDAE  TRIDAIDA | HYDROPTILIDAE                           |          |       |      |               |
| ### 1 0 0 0 2   1 0 0 0 2   1 0 0 0   1 0 0    | HYDROPTILA                              | 0        | ٥     | -    |               |
| EA   | ****                                    |          |       |      |               |
| ES 0 0 2 2 1 5 0 0 2 2 1 5 0 0 0 2 2 1 5 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0   | LEPTOCERIDAE                            | •        | •     | •    |               |
| S  | CERACLEA                                | -        | 0     | 0    |               |
| WODES  WODES  WODES  WODES  WITHOUS  WI | ; c + + + + + + + + + + + + + + + + + + | C        | C     | 0    |               |
| ### 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1  |   | •        | •     | )    |               |
| WODES 0 1 0  THOUS 0 1  THOUS 0 1 0  THOUS 0 1  THOUS 0  | SETODES                                 | 0        | -     | 0    |               |
| WODES 0 1 0  WITROPOLIDAE 2 1 4  ICHOPTERA 1 1 0  RIONIDAE 1 1 0   |   |          |       |      |               |
| VTROPODIDAE 2 1 4 ENTROPOLS 2 1 4 ELLOPTERA 1 1 0 RICHIDAE 1 1 0   | TRIAENODES                              | 0        | -     | 0    |               |
| ENTROPUS<br>ENTROPUS<br>ICHOPTERA<br>RIONIDAE<br>2 2 3   |   |          |       |      | •             |
| ICHOPTERA RICHIDAE 1 1 0   | POLYCENTROPUS                           | 8        | -     | 4    |               |
| ICHOPTERA 1 1 0 RICHIDAE 2 2 3   |   |          |       |      |               |
| RIONIDAE 1 1 0 2 2 3   | ALL TRICHOPTERA                         |          |       |      | 8             |
| RIONIDAE 1 0 2 2 3   | ODOMATA                                 | ,        |       | •    | :             |
| 2 2 3  | COENAGRIONIDAE                          | -        | -     | 0    | <u>*</u>      |
|  | ACARINA                                 | n        | ~     | ო    | . 97          |

| TRANSECT & STATION 2 (CONT'D)  GRAB COUNTS ESTIMATED  TAXON  GASTROPODA  AMNICOLA  AMNICOLA  AMNICOLA  ELIMIA LIVESCENS  ELIMIA LIVESCENS  GYRAULUS  PHYSA  VALVATA TRICARINATA  O 4 0  ALL GASTROPODA  SPHAERIIDAE  PISIDIUM  ALL PELECYPODA  ALL PELECYPODA  ALL PELECYPODA  ALL PELECYPODA | MACROZOOBENTHOS PONAR GRAB COUNT DATA |    |         |     | 10/17/84      |
|---|---------------------------------------|----|---------|-----|---------------|
| GRAB COUNTS 1 2 3 3 1 2 3 3 1 2 3 3 1 2 3 3 1 2 3 3 2 2 3 3 2 3 3 4 3 4 7 17 TRICARINATA 0 4 0 0PODA AE 15 21 20  | TRANSECT 8 STATION 2 (CONT'D)         |    |         |     |               |
| 1 2 3 39 22  IVESCENS   | TAXON                                 | ₹, | JOS SOL | NTS | ESTIMATED     |
| 29 39 22  IVESCENS  | -                                     | -  | ~       | 9   | NO./SQ. METER |
| 1VESCENS 7 14 3 9 4 3 9 4 3 9 4 3 9 4 3 9 4 9 4 9 9 4 9 9 9 9   | GASTROPODA                            |    |         |     |               |
| IVESCENS 7 14 3  FILCARINATA 9 4 4  OPODA 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6   | AMNICOLA                              | 90 | G       | 66  |               |
| TRICARINATA 0 4 0 OPODA 15 21 20 VPODA  | £ 3 9 9 1 9                           | ;  | )       | 1   |               |
| TRICARINATA 0 4 0 OPODA AE 15 21 20   | ELIMIA LIVESCENS                      | 1  | 7       | e   |               |
| 9 9 4  TRICARINATA 0 4 0  OPODA  AE 15 21 20  | ŀ                                     |    |         | •   |               |
| TRICARINATA 0 4 0 OPODA AE 15 21 20   | GYRAULUS                              | Ø  | Œ       | 4   |               |
| TRICARINATA 0 4 0 OPODA AE 15 21 20   | ·                                     | ı  | )       | •   |               |
| TRICARINATA 0 4 0 OPODA AE 15 21 20   | PHYSA                                 | 8  | 17      | 12  |               |
| TRICARINATA 0 4 0   |                                       | 3  | :       | :   |               |
| OPODA  15 21 20  1900A  | VALVATA TRICARINATA                   | 0  | 4       | c   |               |
| OPODA AE 15 21 20 YPODA   |                                       | •  | •       | •   |               |
| AE<br>15 21 20<br>YPODA   | ALL GASTROPODA                        |    |         |     | 1460          |
| 15 21 20  | PELECYPODA                            |    |         |     |               |
| 15 21 20  | SPHAERIIDAE                           |    |         |     |               |
|   | PISIDIUM                              | Ė  | 2.      | 00  | 286           |
|   | ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; | !  | ì       | •   |               |
|   | ALL PELECYPODA                        |    |         |     | 386           |

B-561

.

an comply and the

| MACRUZUOBENTHOS PONAR GRAB COUNT DATA |            |             |            | 10/17/84                              |
|---------------------------------------|------------|-------------|------------|---------------------------------------|
| ST. CLAIR RIVER TRANSECT 8 STATION 3  |            |             |            |                                       |
|                                       | <u>e</u> – | GRAB COUNTS | SUNTS<br>3 | ESTIMATED NO./SQ. METER               |
| CNIDARIA<br>HYDRA                     | 29         | \$          | 474        | 4 194                                 |
| ALL CNIDARIA                          |            |             |            | 4194                                  |
| RHABDOCOELA                           | m          | 40          | 47         | 399                                   |
| NEMERTINEA                            | •          | 0           | N)         | 8                                     |
| NEMATODA                              | 5          | 11          | 9          | 413                                   |
| OLIGOCHAETA<br>Spirosperma            | 23         | 8           | 8          |                                       |
| STYLARIA                              | 8          | 0           | 5          |                                       |
| OTHER<br>ALL OLIGOCHAETA              | 347        | 337         | 318        | 7637                                  |
| POLYCHAETA MANAYUMKIA SPECIOSA        | •          | 0           | 3          | 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 |
| CLADOCERA BOSHINA                     | 0          | ~           | 20         |                                       |
| DAPHNIA                               | 0          | 4           | 8          |                                       |
| HOLOPEDIUM                            | •          | 20          | 37         |                                       |
| ALL CLADOCERA                         |            |             |            | ,                                     |

| MACKUZOOBENTHOS PONAR GRAB COUNT DATA   | T DATA |       |             | 10/17/84                |
|---|--------|-------|-------------|-------------------------|
| TRANSECT B STATION 3 (CONT'D)           |        |       |             |                         |
|   |        | RAB C | GRAB COUNTS | ESTIMATED NO./SO. METED |
| - 6                                     |        |       |             |                         |
| HABBACHTONDA                            |        | •     | Þ           |                         |
| 101001-01-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1 | 7      | 0     | <b>c</b> o  |                         |
| ALL COPEPODA                            |        |       |             | 100                     |
| OSTRACODA                               | 8      | ø     | 8           | ø                       |
| AMPHIPODA                               |        |       |             | 3                       |
| GAMMARUS                                | 8      | -     | 98          |                         |
| HYALELLA AZTECA                         | C      | C     | r           |                         |
| ALL AMPHIPODA                           | •      | •     | •           | C                       |
| DIPTERA                                 |        |       |             | 505                     |
| CERATOPOGONIDAE                         | 8      | 0     | 0           |                         |
| ALL DIPTERA                             | 341    | 299   | 336         | 6721                    |
| EPHEMEROPTERA<br>CAENIDAE               |        |       |             |                         |
| CAENIS                                  | 6      | 7     | 22          |                         |
| EPHEMERIDAE                             |        |       |             |                         |
| HEXAGENIA                               | 8      | 266   | 148         |                         |
| ALL EPHEMEROPTERA                       |        |       |             |                         |

| ENA STATION 3 (CONT.D)  GRAB COUNTS  1 2 3  ENA ENA ENA ENA ENTRIDAE  CENTRUS  CONTROL  SYCHE  SYCHE | (                                       |      |     |             |               |
|--|---|------|-----|-------------|---------------|
| FIDAE TTRUS TTRUS TTRUS TTRUS TIDAE SYCHE O 0 1 O 1 O 1 O 0 1 O 1 O 1 O 1 O 1 O 1 O 1 O 1 O 1 O 1 O  | TRANSECT B STATION 3 (CONT.D)           | GRAB | COU | 1TS         | ESTIMATED     |
| RIDAE TTRUS TTRUS TTRUS TIDAE SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCHE SYCHE SYCHE SYCHE SYCH SYCH SYCH SYCH SYCH SYCH SYCH SYCH   |   | -    | 7   | က           | NO./SQ. METER |
| NTRUS  HIDAE HIDAE HIDAE CHE CHE CHE CHE CHE CHE CHE CHE CHE CH  | RIDAE                                   |      |     | !<br>!<br>! |               |
| HIDAE PSYCHE CHE CHE CHE CHE CHE CHE CHE CHE CHE   | BRACHYCENTRUS                           | 0    | 0   | -           |               |
| CHE  | HYDROPSYCHIDAE                          | •    | •   | •           |               |
| CHE DAE  DAE  OPODIDAE  PSIS  OPTERA  TA  TA  2 0 1 0  41  7  TA  TA  2 0 4 41  7  0 0 1 9  0000A  OPODA  OPODA  OPODA  OP 2 0   |   | >    | >   | -           |               |
| DAE  OPODIDAE  PSIS  OPTERA  TA  TA  2 0 1 0  41  7 7  2 0 1 7  0 0 7  0 0 1 9  0PODA  AE  B 46 11 448   | HYDROPSYCHE                             | 0    | 0   | 8           |               |
| DPDEDAE PSIS OPTERA  DPTERA  TA  TA  2 0 4 41  7 7  0 0 1 9  0PDDA  OPDDA  AE  B 46 11 448   |   |      |     |             |               |
| OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPODA  OPODA  AE  B 46 11 448  | LEFIUCERIDAE<br>OECETIS                 | 0    | Ŧ   | 0           |               |
| OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  OPODA  OPOD | 1 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |      |     |             |               |
| OPTERA  OPTERA  TA  TA  2 0 4 41  7 7  12 3 36  0 0 7  0 0 1 9  OPODA  AE  8 46 11 448   | POLYCENTROPODIDAE<br>NEIDECLIOSIC       | c    | -   | c           |               |
| OPTERA OPTERA  TA  TA  2 0 4 41  12 3 36  0 0 7  0 0 7  0 1 9  OPODA  AE  B 46 11 448  |   | •    |     | )           |               |
| TA 2 0 1 7 7 2 0 4 41 12 3 36 0 0 1 9 0 1  | ALL TRICHOPTERA                         |      |     |             | <b>-</b>      |
| TA 2 0 1 7 7 7 2 0 4 41 61 9 0PODA 468 9 11 448  | ODGNATA                                 |      |     |             |               |
| TA 2 0 4 41 68 OPODA 68 46 11 448  | GOMPHIDAE                               | 0    | 0   | -           | 1             |
| 0P000A  0P000A |   |      |     |             | r             |
| 12 3 36<br>0 0 7<br>0 1 9<br>0P00A<br>0P00A<br>0P00A<br>0P00A<br>0P00A<br>0 1 9<br>0 1 9   | ALL COCKAIA                             |      |     |             | •             |
| 12 3 36<br>0 0 7<br>0 1 9<br>0PODA<br>0PODA<br>0 1 9<br>468<br>0 2 0   | ACARINA                                 | 8    | 0   | •           | 7             |
| 0 0 7 0 7 0 0 7 0 0 0 0 0 0 0 0 0 0 0 0  | GASTROPODA                              | ;    |     | ;           |               |
| 0 0 7<br>0 1 9<br>0 1 9<br>0 1 9<br>0 1 9<br>0 2 0   | AMMICOLA                                | 72   | 70  | 9           |               |
| OPODA  OPODA  AE  8 46 11 448  | GYRAULUS                                | 0    | 0   | -           |               |
| OPODA  AE  8 46 11 448   | ANTA                                    | 0    | -   | ø           |               |
| AE 88 46 11  | ALL GASTROPODA                          |      |     |             |               |
| 8 46 11  | PELECYPODA                              |      |     |             |               |
| 0 7 0  | SPHAERIIDAE                             | đ    | 46  | :           | 448           |
| 0 2 0  | EDIOTOT L                               | •    | }   | :           | ?             |
|  | UNIONIDAE                               | 0    | 7   | 0           |               |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |      |       |                | 10/17/84      |
|---------------------------------------|------|-------|----------------|---------------|
| ST. CLAIR RIVER TRANSECT 9 STATION 1  | 9    | į     | •              |               |
| TAXON                                 | -    | 4 2 3 | n m            | NO./SQ. METER |
| CNIDARIA<br>Hydra                     | -    | 0     | -              | 4             |
| ALL CNIDARIA                          |      |       |                | 4             |
| RHABDOCOELA                           | 8    | 0     | 0              | <u> </u>      |
| NEMATODA                              | 6    | ED.   | -              | 62            |
| OLIGOCHAETA<br>Nais                   | 0    | 0     | 8              |               |
| SPIROSPERMA                           | -    | -     | а              |               |
| STYLARIA                              | 8    | 0     | S.             |               |
| OTHER<br>ALL OLIGOCHAETA              | 20   | 0     | <del>4</del>   | 572           |
|                                       | 0    | 0     | 4              | <b>28</b>     |
| ALL POLYCHAETA                        |      |       |                | 28            |
| CLADGERA<br>BOSMINA                   | Œ    | 4     | ĸ              |               |
| 4 (241d #0                            | , ā  | . 40  | , <del>č</del> |               |
|                                       | 2 \$ |       | : ;            |               |
|                                       | 2    | :     | :              |               |
| ALL CLADOCERA                         |      |       |                | 199           |

| TRANSECT 9 STATION 1 (CONT'O)  TRANSECT 9 STATION 1 (CONT'O)  TAXON  COPERDOA  CYCLOPS BICUSPIDATUS  TO 15 7  4 3 1  0 0 0  4 3 1  1 0 0  AMPHIPODA  AMPHIPODA  AMPHIPODA  AMPHIPODA  ALL SOPODA  ISOPODA  ISOPODA  ISOPODA  ITERRESTRIAL INSECT  DIPTERA  CERATOROMONIDAE  CHERREPOPTERA  CHERREPOPTERA  CHERREPOPTERA  CHERREPOPTERA  CHERREPOPTERA  CHERREPOPTERA  ALL EPHEMEROPTERA  GO 0 1  TO 0 2  STENOMENA  O 0 1  TO 0 0  T | MACROZOOBENTHOS PONAR GRAB COUNT DATA |              |            |           | 10/17/84               |
|--|---------------------------------------|--------------|------------|-----------|------------------------|
| GRAB COUNTS  CUSPIDATUS  1 5 1  ACUSTRIS  A  TFECA  NSECT  DAE  GRAB COUNTS  1 5 1  1 0 0  4 3 1  0 0 4  0 0 4  0 0 3  NSECT  DAE  6 0 4  0 0 1  0 0 2  E  F  F  F  F  F  F  F  F  F  F  F  F  | 0                                     |              |            |           |                        |
| CUSPIDATUS  1 5 1  ACUSTRIS  ACUSTRI | z                                     | GRAE<br>1    | 200        | UNTS<br>3 | ESTIMATED NO./SO. METE |
| MCUSTRIS  ACUSTRIS  ACUSTRIS  A 3 1  IDA  A  TRECA  O 0 4  A 2 11  DAE  E  E  O 0 1  O 0 1  O 0 1  DAE  O 0 1  O 0 1  DAE  O 0 1  DAF  FIRA  | , ע                                   |              |            |           |                        |
| HOUSTRIS  ACUSTRIS  ACUSTR |                                       | -            | RU.        | -         |                        |
| MACUSTRIS  A  TTECA  NSECT  DAE   C  C  C  C  C  C  C  C  C  C  C  C   | DIAPTOMUS                             | 5            | ī          | 7         |                        |
| DAE  NSECT  NSECT  O 0 1  O 0 4  O 0 4  O 0 3  O 0 1  O 0 0 1   | EPISHURA LACUSTRIS                    | 4            | 62         | -         |                        |
| MSECT  | HARPACTICOIDA                         | •            | •          | . (       |                        |
| FYECA  NSECT  NSECT  NSECT  O 0 4  O 0 3  O 0 1  O 0 1  O 0 2  O 0 2  FERA   | ALL COPEPODA                          | <del>-</del> | 0          | 0         | 22                     |
| TTECA  O 0 4  NSECT  OAE  O 0 3  O 0 1  OAE  O 0 2  O 0 2  DAE  E  O 0 0 1  O 0 1  O 0 1  O 0 0 2  | AMPHIPODA                             |              |            |           |                        |
| DAE  O O 4  O O 3  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1  O O 1   | GAMMARUS                              | 9            | 0          | 4         |                        |
| DAE 0 0 3 53 4 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 53 6 5 5 5 5   |                                       | 0            | 0          | 4         |                        |
| MSECT 0 0 3 11   | ALL AMPHIPODA                         |              |            |           | ų,                     |
| MSECT 0 0 3  DAE 4 2 11  3 3 53 44  6 1 0 0 1  PTERA   | ISOPODA                               |              |            |           | 8                      |
| DAE 4 2 11 1 3 3 53 53 53 FERA   | LIRCEUS                               | 0            | 0          | 60        | 21                     |
| DAE  | ALL ISOPODA                           |              |            |           | 21                     |
| DAE 4 2 11 3 53 6 0 2 6 1 0 PTERA  | TERRESTRIAL INSECT                    | 0            | 0          | -         | , ,                    |
| DAE 4 2 11 3 53 6 0 2 6 1 0 7 FERA   | DIPTERA                               |              |            |           |                        |
| 3 3 3 53 FERA  | CERATOPOGONIDAE<br>CHIRDANIMIDAE      | 4 (          | 8          | = :       |                        |
| 6 0 2 6 1 0 9 1 FERA   | ALL DIPTERA                           | m            | <b>6</b> 0 | 53        | 406<br>523             |
| NERIDAE  | EPHEME ROPTERA                        |              |            |           |                        |
| AGENIDAE AGENIA AGENIDAE NONEMA 0 0 1 EPHEMEROPTERA  | CAENIDAE                              | 0            | 0          | 8         |                        |
| AGENIA AGENI IDAE NONEMA EPHEMEROPTERA  6 1 0 1  | FPHERENIDAE                           |              | i          | ı         |                        |
| AGENIIDAE NONEMA NONEMA EPHEMEROPTERA  | HEXAGENIA                             | g            | -          | 0         |                        |
| NONEMA 0 0 1   | HEPTAGENI I DAE                       |              |            |           |                        |
| EPHEMEROPTERA  | STENONEMA                             | 0            | 0          | -         |                        |
|  | ALL EPHEMEROPTERA                     |              |            |           | œ                      |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |   | 10/17/84  |
|---------------------------------------|-----|-------------|---|---|
| TRANSECT 9 STATION 1 (CONT'D)         |     |             |   |   |
| TAXON                                 |     | GRAB COUNTS | COUNTS<br>2 3                           | ESTIMATED NO./SQ. METER   |
| GASTROPODA                            |     |             | 1 | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |
| AMNICOLA                              | ED. | 0           | 0                                       |   |
| GYRAULUS                              | 0   | 0           | -                                       |   |
|                                       | ,   | ,           | •                                       |   |
| PHYSA                                 | -   | 0           | 0                                       |   |
| \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$   |     |             |   |   |
| ALL GASTROPODA                        |     |             |   | 48  |
| PELECYPODA                            |     |             |   |   |
| SPHAERIIDAE                           |     |             | ,                                       |   |
| PISIDIO                               | m   | 0           | m                                       |   |
| ALL PELECYPODA                        |     |             |   | 14  |
|                                       |     |             |   |   |

B-567

1

| ST. CLAIR RIVER          | TRANSECT 9 STATION 2                  |          |             |          |                         |
|--------------------------|---------------------------------------|----------|-------------|----------|-------------------------|
| TAXON                    |                                       | GRA<br>- | GRAB COUNTS | S E      | ESTIMATED NO./SQ. METER |
| CNIDARIA                 | # # # # # # # # # # # # # # # # # # # | c        | c           | -        |                         |
| ALL CNIDARIA             |                                       | •        | •           | •        | - •                     |
| NEMATODA                 |                                       | -        | 0           | 8        | , 6                     |
| OLIGOCHAETA              |                                       |          | •           | )        | I                       |
| STIKOSPEKMA              |                                       | -        | 0           | 0        |                         |
| OTHER<br>All Oligochaeta |                                       | o        | €0          | 4        | 220                     |
| CLADOCERA                |                                       |          |             |          | •                       |
| BOSMINA                  |                                       | 4        | 8           | 4        |                         |
| DAPHNIA                  |                                       | ď        | ŗ           | ٢        |                         |
|                          |                                       | •        | ,           |          |                         |
| EURYCERCUS LAMELLATUS    | ATUS                                  | -        | 0           | 0        |                         |
| HOLOPEDIUM               | •<br>•<br>•                           | 4        | <u>.</u>    | Ľ        |                         |
| ALL CLADOCERA            |                                       | :        | ?           | מ        | 778                     |
| COPEPODA                 |                                       |          |             |          | 7                       |
| CYCLOPS BICUSPIDATUS     | TUS                                   | 0        | ~           | -        |                         |
| DIAPTOMIS                | † ‡ ‡                                 | (        | ,           | ,        | •                       |
|                          |                                       | מכ       | 0           | 9        |                         |
| EPISHURA LACUSTRIS       | IO.                                   | -        | c           | •        |                         |
|                          |                                       | •        | •           | >        |                         |
| HARPACTICOIDA            |                                       | -        | 0           | -        |                         |
| ALL COPEPODA             |                                       |          |             |          |                         |
| ntotesa                  |                                       |          |             |          | 1                       |
| CERATOPOGONIDAE          |                                       | ·        | ·           | c        |                         |
| CHIRONOMIDAE             |                                       | v ec     | 4 10        | <b>,</b> | Ş                       |
| A                        |                                       |          | 1           | •        |                         |

| MACROZDOBENTHOS PONAR GRAB COUNT DATA                 |           |                      |         | 10/17/84                |
|---|-----------|----------------------|---------|-------------------------|
| TRANSECT 9 STATION 2 (CONT'D)                         |           |                      |         |                         |
| TAXON   | GRAB<br>1 | GRAB COUNTS<br>1 2 3 | 7S<br>3 | ESTIMATED NO./SQ. METER |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE 0 0 1 | 0         | 0                    | -       |                         |
| ALL TRICHOPTERA                                       |           |                      |         | 7                       |
| GASTROPODA<br>PHYSA                                   | 0         | -                    | ٥       |                         |
| ALL GASTROPODA  |           |                      |         | ٢                       |

B-569

1

| ST. CLAIR RIVER TRANSECT 9 S<br>TAXON   | O STATION 2 |             |          |                         |
|---|-------------|-------------|----------|-------------------------|
| TAXON                                   |             |             |          |                         |
|   |             | GRAB COUNTS | COUNTS   | ESTIMATED NO./SQ. METER |
| •                                       | 461         |             | 0 535    | 2000                    |
| ALL CNIDARIA                            |             |             |          |                         |
| RHABDOCDELA                             |             |             | 9        |                         |
| NEMERTINEA                              |             | 0           | -        |                         |
| NEMATODA                                |             | 0           | <b>o</b> | 152                     |
| OLIGOCHAETA<br>SPIROSPERMA              | •           | -           | =        |                         |
| STYLARIA                                | 9.          | •           | Ç        |                         |
| OTHER<br>ALL DLIGOCHAETA                | 96          | 5           | -        | 2030                    |
| POLYCHAETA<br>Manayunkia speciosa       | 57          | 7           | 9        | 9 0                     |
| ALL POLYCHAETA                          |             |             |          | et 01                   |
| CLADOCERA<br>BOSMINA                    | C           | <u> </u>    | c        |                         |
| DAPHNIA                                 |             |             |          |                         |
| 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | •           | n           | 9        |                         |
| HOLOPEDIUM                              | =           | 6           | 9        |                         |
| ALL CLADOCERA                           |             |             |          | 799                     |

|                               |     |            |       | 10/17/84      |
|-------------------------------|-----|------------|-------|---------------|
| TRANSECT 9 STATION 3 (CONT'D) | 100 | 5          | a La  | 1             |
|                               | ¥ - | 3 m        | 1 2 3 | NO./SQ. METER |
| 8                             | •   |            |       |               |
| CYCLUPS BICUSPIDATUS          | 8   | 0          | 0     |               |
| _                             | 4   | -          | 0     |               |
|                               |     |            | ,     |               |
| EPISHURA LACUSTRIS            | 0   | -          | 9     |               |
| ပ                             | 0   | 8          | ∞     |               |
| ALL COPEPODA                  |     |            |       | 234           |
| ACCOUNTE                      |     |            |       |               |
| GAMMARUS                      | 48  | 0          | =     |               |
| HYALELLA AZTECA               | 6   | 0          | 0     |               |
| ALL AMPHIPODA                 |     |            |       | 427           |
| DIPTERA                       |     |            |       |               |
| CERATOPOGONIDAE               | 9   | 8          | -     |               |
| CHIRONOMIDAE                  | 92  | <u>5</u> 0 | 90    | 916           |
| ALL DIPTERA                   | >   | •          | 4     | 992           |
| EPHEMEROPTERA                 |     |            |       |               |
| CAENIDAE                      | •   | (          | (     |               |
|                               | •   | 0          | ٥     | •             |
| EPHEMERIDAE                   |     |            |       |               |
| HEXAGENIA                     | 72  | 0          | 7     |               |
| BAETISCIDAE                   |     |            |       |               |
| BAETISCA                      | 0   | 0          | -     |               |
| ALL EPHEMEROPTERA             |     |            |       | 241           |
| TRICHOPTERA                   |     |            |       |               |
| HYDROPSYCHIDAE                |     |            |       |               |
| CHEUMATOPSYCHE                | -   | ٥          | -     |               |
| LEPTOCERIDAE                  |     |            |       |               |
| OFCETIS                       | -   | ٥          | 0     |               |
| ALL TRICHOPTERA               |     |            |       | 25            |

| 9 STATION 3 (CONT'D)  GRAB CDUNTS ESTIMATE 1 2 3 NO./SQ. M 5 0 0 34  IVESCENS 2 0 1 2 0 0 2 2 0 0  AE  AE  22 2 2 2 6 344  | MACHOLOGICALINGS PUNAR GRAB COUNT DATA  |      |       |     | 10/17/84               |
|--|---|------|-------|-----|------------------------|
| GRAB CDUNTS 1 2 3 1 2 3 1 2 3 1 2 3 2 0 0 3 1 2 0 1 2 0 0 2 2 0 0 2 2 0 0 0 3 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6  | TRANSECT 9 STATION 3 (CONT.D)           |      |       |     |                        |
| 1VESCENS 5 0 0 3 1 0 0 3 1 0 0 0 1 0 0 0 0 0 0 0 0   | TAXON                                   | GRA! | 8 COU | STS | ESTIMATED NO./SO METER |
| 1. VESCENS 2 0 1 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | ACARINA                                 |      | 0     | 0   | 76                     |
| IVESCENS 2 0 1 2 0 1 0 0 2 0 0 0 0 0 0 0 0 0 0 0   | GASTROPODA                              |      |       |     | <b>;</b>               |
| AE  2 0 1 2 0 1 2 0 0 2 0 0 2 0 0 2 0 0 3 0 0 0 0  | AMNICOLA                                | c    | c     | c   |                        |
| 1.VESCENS 2 0 1 0.00 2 0.00 2 0.00 2 0.00 3 0.00 4   |   | >    | >     | י   |                        |
| OPODA  VPODA  VPODA  | ELIMIA LIVESCENS                        | ·    | c     | ,   |                        |
| OPUDA  AE  2 0 0  AE  2 0 0  2 0 0  4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |   | ٧    | >     | -   |                        |
| OPODA  AE  2 0 0  4 0 0  2 0 0  4 0 0 | GYRAULUS                                | (    | (     | •   |                        |
| 2 0 0 O O O O O O O O O O O O O O O O O  | *************************************** | >    | >     | Ν.  |                        |
| OPODA  AE  22 2 26 3   | PHYSA                                   | r    | c     | •   |                        |
| OPODA  AE  22 2 26 3   |   | ٧    | >     | 0   |                        |
| AE 22 2 26 3<br>YPODA  | ALL GASTROPODA                          |      |       |     | 9                      |
| 22 2 26  | PELECYPODA                              |      |       |     | 9                      |
| 22 2 26  | SPHAERIIDAE                             |      |       |     |                        |
|  | PISIDIUM                                | 22   | ·     | 90  | ,,,                    |
|  | *****                                   | ľ    | •     | 9   | 440                    |
|  | ALL PELECYPODA                          |      |       |     | į                      |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |           |             |      | 10/11/84                   |
|---|-----------|-------------|------|----------------------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 1<br>TAXON            | GRAB<br>1 | GRAB COUNTS | TS 8 | ESTIMATED<br>NO./SQ. METER |
| NEMATODA  | 0         | 0           | 8    | 4+                         |
| OLIGOCHAETA   | e         | 0           | -    | 28                         |
| CLADOCERA<br>BOSEINA                                      | ~         | c           | •    | ,                          |
| DAPPALA   | · =       | . +         | . 5  |                            |
| HOLOPEDIUM  | €         | ě           | 9    |                            |
| ALL CLADOCERA   |           |             |      |                            |
| COPEPODA<br>DIAPTOMUS                                     | 4         | 8           | -    |                            |
| EPISHURA LACUSTRIS  | -         | 8           | 0    |                            |
| _   |           |             |      | 69                         |
| AMPHIPODA GAMMARUSALL AMPHIPODA                           | •         | -           | 0    |                            |
| TERRESTRIAL INSECT  | -         | 0           | -    | 4.                         |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 0 m       | 0 00        | in m | 96                         |
|   |           |             |      |                            |

| 10/17/84  | ESTIMATED<br>NO./SQ. METER                      |                                       | <del>-</del> - |
|---|---|---------------------------------------|----------------|
|   | NTS   |                                       | v              |
|   | GRAB COUNTS                                     | c                                     | 2              |
|   | GRAB  | •                                     | -              |
| MACROZOOBENTHOS PONAR GRAB COUNT DATA<br>TRANSECT 10 STATION 1 (CONT'D) | TAXON GRAB COUNTS ESTIMATED 1 2 3 NO./SQ. METER | PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM | ALL PELECYPODA |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                   |      |             |                | 10/17/84           |
|---|------|-------------|----------------|--------------------|
| ST. CLAIR RIVER TRANSECT 10 STATION 2 TAXON             | GRAE | GRAB COUNTS | MTS            | ESTIMATED NO ACTED |
|   |      | ٠ أ         | ,              |                    |
| HYDRA   | 5    | Ç           | 24             | 378                |
| ALL CNIDARIA  |      |             |                | 378                |
| RHABDOCOELA   | 5    | =           | 33             | 599                |
| TRICLADIDA  | -    | -           | 0              | :                  |
| NEMATODA  | 11   | 80          | <del>1</del> 3 | 262                |
| PISCICOLIDAE<br>PISCICOLA<br>PISCICOLA<br>ALL HIRUDINEA | -    | 0           | 0              |                    |
| OLIGOCHAETA<br>Spirosperma                              | 2    | =           | 2              |                    |
| STYLARIA  | 4    | 32          | 86             |                    |
| OTHER<br>ALL OLIGOCHAETA                                | 300  | 11          | 01             | 4876               |
| POLYCHAETA<br>Manayunkia speciosa                       | 9    | +           | 74             | 282                |
| ALL POLYCHAETA  |      |             |                | . 782              |
| CLADOCERA<br>BOSMINA                                    | Ø    | 4           | 4              |                    |
| DAPHNIA   | 60   | 9           | 12             |                    |
| HOLOPEDIUM  | 60   | •           | 7              |                    |
| ALL CLADOCERA   |      |             |                | 503                |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |            |           |       | 10/17/84      |
|--|------------|-----------|-------|---------------|
| TRANSECT 10 STATION 2 (CONT'D)             | GDAG       | COUNTS    | A TAI | ESTIMATED     |
| TAXON                                      | -          | 2         | 9 0   | NO./SQ. METER |
| COPEPODA<br>DIAPTOMUS                      | 0          | -         | 0     |               |
|  | 0          | ~         | 0     |               |
| HARPACTICOIDA                              | <b>®</b>   | 0         | 0     |               |
| ALL COPEPODA                               |            |           |       | 76            |
| OSTRACODA                                  | •          | -         | 0     | 83            |
| AMPHI PODA<br>GAMMARUS                     | <b>58</b>  | 28        | 24    |               |
| HYALELLA AZTECA                            | ∞          | <b>∞</b>  | 24    |               |
| ALL AMPHIPODA                              |            |           |       | 826           |
| ISOPODA<br>ASELLUS                         | 0          | 0         | •     | •             |
| ALL ISOPODA                                |            |           |       |               |
| TERRESTRIAL INSECT                         | 8          | 4         | 0     | <del>*</del>  |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE | 162<br>162 | 13<br>259 | 9 207 | 4325          |
| EMPIDIDAE<br>All diptera                   |            | 0         | 0     | 4552          |

| EPHEMEROPTERA CAENIS ALL EPHEMEROPTERA TRICHOPTERA HYDROPTILA HYDROPTILA MYSTACIDES TAICHOPERA TAICHOPTERA TAICHOPTER | 20 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | GRAB COUNTS  1 2 3  1 2 3  7 29 21  5 2 4  5 0 0 2 | 2 2 2 3 3 3 4 2 5 | NO./SQ. METER |
|--|--|--|-------------------|---------------|
| P = ER A   | 0 h m                                    | 2 3 6 7 6  | 2 2 4 2           | 1061          |
| E ROPTERA A E S S S S S S S S S S S S S S S S S  | 0 b m                                    | 2 3 37   | 2 2 4 2           | 1 <b>8</b> 01 |
| E ROPTERA A E S S S S S S S S S S S S S S S S S  |  | 7 28 3   | y                 | 1 <b>8</b> 01 |
| E ROPTERA A E S S S S S S S S S S S S S S S S S  | <u> </u>                                 | 0 7 28   | <u>u</u> 4 u      | <b>180</b>    |
| ROPTERA<br>BOAE<br>A A E   | <u> </u>                                 | 0 7 28   | 2 4 4             | <b>180</b>    |
| ROPTERA<br>POPTERA<br>A A E E E E E E E E E E E E E E E E E  | se                                       | 0 0  | 4 0               | 6<br>6        |
| ROPTERA AAE S  | <b>s</b> 0                               | 0 0  | 4 0               | 60.<br>1      |
| ALL EPHEMEROPTERA TRICHOPTERA HYDROPTILIDAE HYDROPTILA LEPTOCERIDAE MYSTACIDES   | (  | 0  | 8                 | 100<br>1      |
| HYDROPTERA<br>HYDROPTILIDAE<br>HYDROPTILA<br><br>LEPTOCERIDAE<br>HYSTACIDES  | (  | 0  | 8                 |               |
| HYDROPTILIDAE<br>HYDROPTILA<br>HYDROPTILA<br>LEPTOCERIDAE<br>MYSTACIDES  | 0  | 0  | ~                 |               |
| HYDROPTILA<br>LEPTOCERIDAE<br>MYSTACIDES   | 6  | 0  | 7                 |               |
| LEPTOCERIDAE<br>MYSTACIDES   |  | )  |                   |               |
| LEPTOCERIDAE<br>MYSTACIDES   | - (                                      |  | !                 |               |
| MYSTACIDES   | - (                                      |  |                   |               |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  |  | ╼ .  | 0                 |               |
|  |  |  |                   |               |
| NECTOPSYCHE  |  | 0  | 0                 |               |
|  | •  | (  | •                 |               |
|  | 9  | >  | •                 |               |
| <b>v</b>   | 0  | 7  | 0                 |               |
|  |  |  |                   |               |
| IDAE   |  |  |                   |               |
| SISdi  | 0  | 0  | -                 |               |
| POLYCENTROPUS  | _  | 0  | -                 |               |
|  |  |  |                   |               |
| ALL TRICHOPTERA  |  |  |                   | 131           |
| ACARINA  | Ø  | <del>.</del>                                       | 9                 | 220           |
| AA STROPODA  |  |  |                   |               |
| AMNICOLA   | _  | 12   | 8                 |               |
|  |  | •  | ,                 |               |
| ELIMIA LIVESCENS   | <b>D</b>                                 | 2  | 12                |               |
| v  | 9  | 0  | Ð                 |               |
|  |  |  |                   |               |
| PHYSA  | 9  | n  | ^                 |               |
| VALVATA TRICARINATA  | 0  | -  | -                 |               |
|  | ,  |  |                   |               |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA   |      |             | 10/17/84                                |
|---|------|-------------|---|
| TRANSECT 10 STATION 2 (CONT'D)          |      |             |   |
| TAXON                                   | GRAE | GRAB COUNTS | S ESTIMATED<br>3 NO./SQ. METER          |
| PELECYPODA                              |      |             | 1 |
| SPHAERIIDAE                             |      |             |   |
| PISIDIUM                                | 4    | 44 10 43    | 3 668                                   |
| • |      |             |   |
| UNIONIDAE                               | -    | 0           | 0                                       |
| ALL PELECYPODA                          |      |             | 675                                     |

| MACROZOOBENTHOS PO                | MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |           | 10/17/84                   |
|-----------------------------------|---------------------------------------|-----|-------------|-----------|----------------------------|
| ST. CLAIR RIVER<br>TAXON          | TRANSECT 10 STATION 3                 | g - | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA                          |                                       | 561 | 465         | 734       | 12121                      |
| ALL CNIDARIA                      |                                       |     |             |           | 12121                      |
| RHABDOCOELA                       |                                       | 30  | <b>58</b>   | 38        | 661                        |
| TRICLADIDA                        |                                       | 4   | ស           | ∞         | 117                        |
| NEMATODA                          |                                       | 9   | 8           | 35        | 475                        |
| OLIGOCHAETA<br>Nais               |                                       | 0   | 60          | -         |                            |
| SPIROSPERMA                       |                                       | 8   | ო           | 34        |                            |
| STYLARIA                          |                                       | 37  | 118         | 113       |                            |
| OTHER<br>ALL OLIGOCHAETA          |                                       | 199 | 94          | 201       | 5688                       |
| POLYCHAETA<br>Manayunkia speciosa | OSA                                   | 83  | 00          | in<br>in  | 1012                       |
| ALL POLYCHAETA                    | :                                     |     |             |           | 1012                       |

| MACK OLD CONTROL CONTR |              |              |                           |               |
|--|--------------|--------------|---------------------------|---------------|
| TRANSECT 10 STATION 3 (CONT'D)   | g            | STAILON GAGS | PMTC                      | 2             |
| TAXON  | , -          | 2 2          | n en                      | NO./SQ. METER |
| CLADOCERA  |              | !<br>!<br>!  | )<br> <br> <br> <br> <br> |               |
| BOSHINA  | တ            | -            | -                         |               |
| DAPHNIA  | 8            | 0            | Ξ                         |               |
| 1 1 2 2 1 1 1  |              |              |                           |               |
| EURYCERCUS LAMELLATUS  | -            | 0            | -                         |               |
|  | -            | 9            | 4                         |               |
|  | •            | •            | •                         |               |
| ILYOCRYPTUS  | -            | -            | 6                         |               |
| ALL CLADOCERA  |              |              |                           | 468           |
| COPEPODA   |              |              |                           |               |
| DIAPTOMUS  | 0            | 0            | -                         |               |
| EPISHURA LACUSTRIS   | 0            | 0            | -                         |               |
| HARPACTICOIDA  | ٥            | 0            | -                         |               |
| ALL COPEPODA   |              |              |                           | 24            |
| OSTRACODA  | 12           | 0            | 24                        | 248           |
| AMPHIPODA  | ţ            | i            | ţ                         |               |
| GARTARUS   | 0<br>20<br>7 | 5            | 166                       |               |
|  | ō            | #            | •                         |               |
| ALL AMPHIPODA  |              |              |                           | 4366          |
| DIPTERA CFBATOPOGONIDAF  | <u>.</u>     | -            | •                         |               |
| CHIRONOMIDAE<br>ALL DIPTERA  | 199          | 238          | 160                       | 4111          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |              |          | 10/17/84      |
|---------------------------------------|-----|--------------|----------|---------------|
| TRANSECT 10 STATION 3 (CONT'D)        | 400 | 5            | ATM.     | ESTIMATED     |
|                                       | -   | 1 2 3        |          | NO./SQ. METER |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS   | ဓ   | 6            | 51       |               |
| EPHEWERIDAE<br>HEXAGENIA              | 240 | 58           | 212      |               |
| ALL EPHEMEROPTERA                     |     |              |          | 4132          |
| LEPIDOPTERA                           | 0   | -            | 0        | 7             |
| TRICHOPTERA<br>Hydropsychidae         |     |              |          |               |
| CHEURATOPSYCHE                        | -   | 0            | 0        |               |
| HYDROPSYCHE                           | 8   | 0            | 0        |               |
| LEPTOCERIDAE                          |     |              |          |               |
| CERACLEA                              | 0   | -            | <b>-</b> |               |
| OECETIS                               | -   | 0            | -        |               |
| TRIAENODES                            | 0   | -            | 0        |               |
| POLYCENTROPODIDAE POLYCENTROPUS       | -   | 0            | -        |               |
| ALL TRICHOPTERA                       |     |              |          | 69            |
| ACARINA                               | ស្រ | 0            | 4        | 62            |
| GASTROPODA<br>AMNICOLA                | 57  | 89           | 8        |               |
|                                       | 8   | 6            | 8        |               |
| GYRAULUS                              | ო   | 27           | <b></b>  |               |
| PHYSA                                 | ω   | <del>*</del> | 24       |               |
| ALL GASTROPODA                        |     |              |          | 2403          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |                            |             | 10/17/84                              |
|---|----------------------------|-------------|---------------------------------------|
| TRANSECT 10 STATION 3 (CONT'D)          | GRAF                       | GRAB COUNTS | ESTIMATED                             |
| TAXON                                   | -                          | 1 2 3       | NO./SQ. METER                         |
| PELECYPODA                              | •<br>•<br>•<br>•<br>•<br>• | <br>        | • • • • • • • • • • • • • • • • • • • |
| SPHAERIIDAE                             |                            |             |                                       |
| PISIDIUM                                | 67                         | 13 37       | 908                                   |
| 1 |                            |             |                                       |
| ALL PELECYPODA                          |                            |             | 908                                   |

| TOTALE ST CLATE  | TOANSECT 44 STATISM 4                               |       |             |          |                            |
|--|---|-------|-------------|----------|----------------------------|
|  |   | GRAE  | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA  | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; | 7     | 0           | 4        | 4.                         |
| ALL CNIDARIA   |   |       |             |          | 14                         |
| RHABDOCDELA  |   | 8     | -           | m        | 4                          |
| TRICLADIDA   |   | 0     | 7           | -        | 21                         |
| NEMATODA   | .,  | 24    | 8           | 27       | 475                        |
| HIRUDINEA<br>GLOSSIPHOMIDAE<br>HELOBDELLA STAGNALIS<br>ALL HIRUDINEA |   | 0     | 0           | a        | <b>.</b>                   |
| OLIGOCHAETA<br>Spirosperma   |   | 28    | 5           | 5        |                            |
| STYLARIA   |   | 0     | 0           | -        |                            |
| OTHER<br>ALL OLIGOCHAETA   | •   | 4     | 93          | 89<br>89 | 1384                       |
| MANAYUNKIA SPECIOSA  | 6   | 372 1 | 171         | 306      | 5847                       |
| CLADOCERA  |   | •     | 5           | ç        | <u> </u>                   |
| EURYCERCUS LAMELLATUS  |   | 0 6   | . 4         | 6 6      |                            |
| HOLOPEDIUM   |   | 6     | -           | 7        |                            |
| ALL CLADOCERA  |   |       |             |          | 388                        |

| TRANSECT 11 STATION 1 (CONT'D)  GRAB COUNTS TAXON  COPEDODA  HARPACTICOIDA  ALL COPEPODA  GAMMARUS  ALL AMPHIPODA  GAMMARUS  GENEMEROPTERA  CHIRONOMIDAE  HEXAGENIA  ALL EPHEMEROPTERA  LEPTOCERIDAE  CHIRONOFERA  LEPTOCERIDAE  ALL EPHEMEROPTERA  LEPTOCERIDAE  CHIRONOFERA  CHIRONOMIDAE  CHIRONOMIDA | 2 0 1 17 17 19 19 19 19 19 19 19 19 19 19 19 19 19 | S ESTIMATED<br>3 NO./SQ. ME<br>7 179<br>179<br>2 448<br>0 262<br>0 262<br>9 399 |
|--|--|---|
| ICOLDA  ICOLDA  PODA  IPODA  IPODA  ITA  ITA  ITA  ITA  ITA  ITA  ITA  I   | i<br>!   |   |
| FODA  19  1 17  1 10 AE  1 15  1 16  1 16  1 17  1 17  1 18  1 18  1 19  |  |   |
| S 17 17 17 17 19 19 19 19 15 15 15 15 16 19 16 19 19 19 19 19 19 19 19 19 19 19 19 19  |  |   |
| DA FUS   |  |   |
| DMIDAE 15  OMIDAE 15  OPTERA 19  HEMEROPTERA 19  ERIDAE 2  ICHOPTERA 2   |  |   |
| DMIDAE 15  DPTERA RIOAE RIOAE HEWEROPTERA TERA TERA TERA TS 2 1CHOPTERA  |  |   |
| 19 19 2 2 ERA  |  |   |
| ROPTERA<br>Ae<br>Ptera   | T  |   |
| AE<br>Ptera  |  | 413   |
| ALL TRICHOPTERA  | _  | ø   |
|  |  | 62  |
| ACARINA 0 0  | •  | _   |
| GASTROPODA AMNICOLA 1 1  | _  |   |
| ; =  |  | _   |
| GYRAULUS   | •  |   |
| VALVATA TRICARINATA 2 0  | _  |   |
| ALL GASTROPODA   |  | 8   |

 MACROZOOBENTHOS PONAR GRAB COUNT DATA
 10/10/84

 TRANSECT 11 STATION 1 (CONT'D)
 GRAB COUNTS
 ESTIMATED

 TAXON
 1 2 3 NO./Sq. METER

 PELECYPODA
 SPHAERIIDAE

 PISIDIUM
 14 42 13 475

 ALL PELECYPODA
 475

| MACROZOOBENTHOS PONAR GRAB COUNT DATA         |     |             |            | 10/10/84                   |
|---|-----|-------------|------------|----------------------------|
| LAKE ST. CLAIR TRANSECT 11 STATION 2<br>TAXON | GR/ | GRAB COUNTS | JNTS       | ESTIMATED<br>ND./SQ. METER |
| RHABDOCOELA                                   | -   | 0           | -          | 14                         |
| TRICLADIDA                                    | -   | 8           | 0          | 21                         |
| NEMATODA                                      | 76  | 101         | 134        | 2183                       |
| DLIGOCHAETA                                   | 9   | 9           | 02         | 1233                       |
| POLYCHAETA<br>Manayunkia speciosa             | 11  | 6           | <b>6</b> 0 | 372                        |
| ALL POLYCHAETA                                |     |             |            | 372                        |
| CLADGCERA<br>Daphnia                          | ø   | 5           | 11         |                            |
| HOLOPEDIUM                                    | -   | -           | 8          |                            |
| ALL CLADOCERA                                 |     |             |            | 255                        |
| COPEPODA<br>Harpacticoida                     | -   | 60          | v          |                            |
| LIMNOCALANUS                                  | 0   | -           | 0          |                            |
| MACROCYCLOPS                                  | a   | Ю           | 1          |                            |
| ALL COPEPODA                                  |     |             |            | 158                        |
| OSTRACODA                                     | -   | ø           | ო          | 89                         |

| TDANSET 11 STATION 2 (COMP.D)            |            |             |          |                        |
|--|------------|-------------|----------|------------------------|
| NOTIFIC 11                               | GRAE       | GRAB COUNTS | STN      | ESTIMATED NO /SO METED |
|  | -          | . !         | ,        |                        |
| AMPHIPODA<br>GAMMARUS                    | 8          | ID.         | n        | 69                     |
| ALL AMPHIPODA                            |            |             |          | <b>69</b>              |
| DIPTERA<br>CHIRONOMIDAE                  | <b>5</b> 6 | 25          | 9        | 482                    |
| EPHEMEROPTERA<br>Ephemeridae<br>Hexagnia | ç          | 2.<br>R     | <b>6</b> |                        |
| ALL EPHEMEROPTERA                        | }          | 2           | 2        | 510                    |
| TRICHOPTERA<br>Leptoceridae<br>Occetis   | -          | 6           | 8        |                        |
| ALL TRICHOPTERA                          |            |             |          | 7                      |
| ACARINA                                  | 0          | -           | 0        |                        |
| GASTROPODA<br>AMNICOLA                   | •          | -           | 0        |                        |
| 1  | 0          | 8           | -        |                        |
| 1  | -          | 0           | 0        |                        |
| ALL GASTROPODA                           |            |             |          | 34                     |
| PELECYPODA                               |            |             |          |                        |
| PISIDIUM                                 | <b>9</b>   | <b>10</b>   | 04       |                        |
| SPHAERIUM                                | ო          | -           | NO.      |                        |
| ALL SPHAERIIDAE                          |            |             |          | 950                    |
|  | ٥          | 0           | -        |                        |
| ALL PELECYPODA                           |            |             |          | 957                    |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA | IT DATA    |             |            | 10/10/84                   |
|---------------------------------------|------------|-------------|------------|----------------------------|
| LAKE ST. CLAIR TRANSECT 11 STATION    | <b>6</b>   |             |            |                            |
| TAXON                                 | <b>3</b> ← | GRAB COUNTS | STNU<br>3  | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                           |            | 5           | 80         | 131                        |
| TRICLADIDA                            | 0          | 0           | -          | 1                          |
| NEMATODA                              | 168        | 210         | 305        | 4104                       |
| ALOSSIPHONIDAE HELOBDELLA ELONGATA    | n          | 0           | <b>L</b> D |                            |
| ALL HINDSINEA                         |            |             |            | ស                          |
| OLIGOCHAETA<br>SPIROSPERMA            | 0          | -           | 0          |                            |
| OTHER<br>ALL OLIGOCHAETA              | 788        | 777         | 938        | 17224                      |
| POLYCHAETA<br>Manayunkia Speciosa     | 37         | 9           | œ          | 427                        |
| ALL POLYCHAETA                        |            |             |            | 427                        |
| CLADOCERA<br>DAPHNIA                  | £          | -           | 9          |                            |
| HOLOPEDIUM<br>ALL CLADOCERA           | m          | 0           | ₩          | 282                        |
| COPEPODA<br>HARPACTICOIDA             | 0          | -           | -          |                            |
| MACROCYCLOPS                          | 60         | 0           | •          |                            |
| ALL COPEPODA                          |            |             |            | 103                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                     |            |                      |          | 10/10/84                   |
|---|------------|----------------------|----------|----------------------------|
| TRANSECT 11 STATION 3 (CONT'D)                            | (          | į                    |          |                            |
| TAXON   | <b>š</b> - | 9KAB COUNTS<br>1 2 3 | 2 C      | ESTIMATED<br>NO./SQ. METER |
| OSTRACODA   | 0          | -                    | 60       | 62                         |
| AMPHI PODA<br>GAMMARUS                                    | 8          | -                    | -        | 28                         |
| ALL AMPHIPODA   |            |                      |          | 28                         |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA | 72         | 900                  | 26       | n n<br>00 0<br>70          |
| EPHEMEROPTERA EPHEMERIDAE HEXAGENIAAALL EPHEMEROPTERA     | 27         | <b>9</b>             | <b>;</b> | 4<br>6                     |
| CEPTOCERIDAE  DECETIS  ALL TRICHOPTERA                    | -          | 0                    | 0        | ٨                          |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                     | 75         | 127                  | <b>5</b> |                            |
| SPHAERIUM   | -          | 8                    | 8        |                            |
| ALL SPHAERIIDAE<br>ALL PELECYPODA                         |            |                      |          | 2169<br>2169               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |     |             |           | 10/10/84                              |
|--|-----|-------------|-----------|---------------------------------------|
| LAKE ST. CLAIR TRANSECT 12 STATION 1 TAXON |     | GRAB COUNTS | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER            |
| CNIDARIA<br>HYDRA                          | 0   | •           | 0         | t t t t t t t t t t t t t t t t t t t |
| ALL CNIDARIA                               |     |             |           | 88                                    |
| RHABDOCOELA                                | 0   | ო           | -         | 28                                    |
| TRICLADIDA                                 | -   | 0           | 0         | 7                                     |
| NEMATODA                                   | 23  | Ď.          | 32        | 01.0                                  |
| <  | •   | 0           | -         |                                       |
| HELOBDELLA STAGNALIS                       | -   | 0           | •         | :                                     |
| ALL HIRUDINEA                              |     |             |           | 7                                     |
| OL I GOCHAETA<br>SPIROSPERMA               | -   |             | 8         | ٠.                                    |
| OTHER<br>ALL OLIGOCHAETA                   | 80  | 8           | 33        | 1005                                  |
| POLYCHAETA<br>Manayuwkia speciosa          | 219 | 25.         | 508       | 4676                                  |
| ALL POLYCHAETA                             |     |             |           | 4676                                  |
| CLADOCERA                                  | 80  | 5           | 13        |                                       |
| ın   | 8   | -           | 8         |                                       |
| HOLOPEDIUM                                 | 25  | 28          | 27        |                                       |
| ALL CLADDCERA                              |     |             |           | 840                                   |
|  |     |             |           |                                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA     |          |             |           | 10/10/84                                |
|---|----------|-------------|-----------|---|
| TRANSECT 12 STATION 1 (CONT'D) TAXON      | æ +      | GRAB COUNTS | STAL<br>B | ESTIMATED<br>ND./SQ. METER              |
| COPEPODA HARPACTICOIDA                    | •        | 7           | 8         | 1 0 6 6 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| MACROCYCLOPS                              | 6        | 8           | n         |   |
| ALL COPEDODA                              |          |             |           | 145                                     |
| OSTRACODA                                 | 5        | 34          | 34        | 558                                     |
| AMPHIPODA<br>Gammarus                     | Ø        | <b>£</b>    | 0         | 213                                     |
| ALL AMPHIPODA                             |          |             |           | 213                                     |
| DIPTERA<br>CHIRGNOMIDAE                   | <b>‡</b> | 8           | 27        | 489                                     |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA | 6        |             | 24        |   |
| ALL EPHEMEROPIERA                         |          |             |           | 510                                     |
| TRICHOPTERA<br>LEPTOCERIDAE<br>OCCETIS    | m        | 4           | -         |   |
| ALL TRICHOPTERA                           |          |             |           | 60<br>10                                |
| ACARINA                                   | -        | 0           | -         | :                                       |
| GASTROPODA<br>AMNICOLA                    | •        | -           | -         |   |
|   | 7        | 0           | cı        |   |
| •   | +        | 0           | -         |   |
| ALL GASTROPODA                            |          |             |           | 62                                      |

| 10/10/84  |             | 10.7.0% ARTERIA |          | 12 |           |                 | 358       | 0              | 700 |
|---|-------------|-----------------|----------|----|-----------|-----------------|-----------|----------------|-----|
|   | GRAB COUNTS | -               |          | 12 |           |                 |           | -              |     |
|   | GRAB<br>1   | 1               |          | 77 | c         | ,               | ,         | 0              |     |
| MACROZOOBENTHOS PONAR GRAB COUNT DATA<br>TRANSECT 12 STATION 1 (CONT.D) | TAXON       | PELECYPODA      | PISIDIUM | *  | SPHAERIUM | ALL SPHAERIIDAE | UNIONIDAE | ALL PELECYPODA |     |

| MACKUZUUBENITUS PUNAK GRAB CUUNI DAIA |   |             |     | 10/10/84      |
|---------------------------------------|---|-------------|-----|---------------|
| LAKE ST. CLAIR TRANSECT 12 STATION 2  | ā | SPAR COUNTS | MTA | SCTIMATED     |
| TAXON                                 | - | 8           |     | NO./SQ. METER |
| 5                                     | - | 0           | 8   | 21            |
| TRICLADIDA                            | 0 | -           | 0   | 7             |
| NEMATODA                              | 7 | 46          | 25  | 572           |
| OLIGOCHAETA<br>Spirosperma            | - | ٥           | 8   |               |
| DTHER<br>ALL OLIGOCHAETA              | 2 | 155         | 89  | 2183          |
| POLYCHAETA<br>Manayunkia Speciosa     | õ | ø           | 8   | 213           |
| ALL POLYCHAETA                        |   |             |     | 213           |
| CLADOCERA<br>DAPHNIA                  | 6 | -           | 5   |               |
| HOLOPEDIUM                            | 4 | 4           | 5   |               |
| ALL CLADOCERA                         |   |             |     | 358           |
| COPEPODA<br>Harpacticoida             | 0 | ~           | ٥   |               |
| MACROCYCLOPS                          | 6 | -           | 6   | •             |
| ALL COPEPODA                          |   |             |     | 62            |
| DSTRACODA                             | - | •           | c   | •             |

C

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                         |      |             |            | 10/10/84                   |
|---|------|-------------|------------|----------------------------|
| TRANSECT 12 STATION 2 (CONT'D) TAXON                          | æ -  | GRAB COUNTS | NTS<br>3   | ESTIMATED<br>NO./SQ. METER |
| AMPHIPODA<br>GAMMARUS   | -    | m           | 0          | 28                         |
| ALL AMPHIPODA   |      |             |            | 28                         |
| TERRESTRIAL INSECT  | -    | 0           | 0          | 7                          |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA     | o ã  | 980         | - 2        | . 689                      |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>HEXAGENIA<br>AL EPHEMEROPTERA | 6    | စ္က         | 8          | 461                        |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM                         | 4.10 | 20          | <b>5</b> 6 |                            |
| SPHAERIUM   | 4    | 0           | -          |                            |
| 444   | 0    | -           | ٥          | 875                        |
| ALL PELECYPODA  |      |             |            | 198                        |

| MACKUZUUBENIHUS PUNAK GRAB CUUNI DATA                |            |       |    | 10/10/84  |
|--|------------|-------|----|---|
| LAKE ST. CLAIR TRANSECT 12 STATION 3                 | ĝ          | 5     | Į. | Catomita  |
| TAXON  | <b>)</b> – | 1 2 3 | 00 | NO./SQ. METER   |
| RHABDOCDELA  | 0          | 7     | 0  | 4   |
| TRICLADIDA   | 0          | -     | 0  | 7   |
| NEMATODA   | <b>‡</b>   | 50    | £  | 324   |
| HIRUDINEA<br>GLOSSIPHONIDAE<br>PLACOBDELLA MONTIFERA | 0          | 0     | -  |   |
| OLIGOCHAETA<br>Spirosperma                           | -          | 0     | 0  |   |
| OTHER<br>ALL GLIGOCHAETA                             | 145        | 108   | 67 | 2211  |
| POLYCHAETA MANAYUMKIA SPECIOSA                       | <u> </u>   | 22    | 32 | 20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>2 |
| CLADGCERA<br>DAPHNIA                                 | 5          | 1     | •  |   |
| HOLOPEDIUM LILITUM ALL CLADOCERA                     | 1          | n     | €  | 378   |
| COPEPODA<br>Harpacticoida                            | 0          | -     | 8  |   |
| MACROCYCLOPS   | ၈          | 0     | 4  | 60<br>80  |
|  |            |       |    |   |

| TRANSECT 12 STATION 3 (CONT'D)  GRAB COUNTS  TAXON  OSTRACODA  AMPHIPODA  GAMMARUS  GAMMARUS  GAMMARUS  ALL AMPHIPODA  CERATOPOGONIDAE  ALL EPHEMEROPTERA  ALL EPHEMEROPTERA  ALL EPHEMEROPTERA  ALL EPHEMEROPTERA  ALL EPHEMEROPTERA  ACARINA  PELECYPODA  SPHAERILOM  SPHAERILOM  CPHAERILOM  TAL SPHAERILOM  TAL | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |        |     | 10/10/84      |
|--|---|-----|--------|-----|---------------|
| FODA PODA FERA AE EROPTERA  OPTERA  M M M M M M M M M M M M M M M M M M  |   | GR. | AB COL | STN | ESTIMATED     |
| PODA PODA PODA PODA PODA ERA AE AAE AAE AAE AAE AAE AAE AAE AAE  |   |     | 2      | 3   | ND./SQ. METER |
| PODA PODA PODA PODA PODA PODA PERA FERA FERA FERA FERA FERA FERA FERA F  |   | _   | 7      | 0   | 14            |
| PODA PODA PODA PODA PODA PA ERA FERA FERA FERA FERA FERA FERA FERA   | AMPHIPODA                               | •   | •      | c   | i.            |
| PODA  PODA  ERA  ERA   |   | -   | 4      | 7)  | cc            |
| DAE RA ERA ERA  ERA  GENA  GENA  GENA  GENA  A  GENA  A  GENA  A  GENA  A  GENA  A  A  A  A  A  A  A  A  A  A  A  A  | ALL AMPHIPODA                           |     |        |     | 55            |
| DAE RA RA RA RA RA RA RE RA A ERA A EROPTERA  OPTERA  M 1 1 2  M 1 1 1 2  M 1 1 2  M 1 1 1 1 2  M 1 1 1  | DIPTERA                                 |     |        |     |               |
| ERA  ERA  A  ERA  A  EROPTERA  OPTERA  M  1 1 2  M  M  M  M  M  M  M  M  M  M  M  M  M   | CERATOPOGONIDAE                         | ٥   | -      | ٥   |               |
| ERA<br>ERA<br>   | CHIRONOMIDAE                            | 22  | 22     | Ξ   | 399           |
| ERA AE EROPTERA DAE  1 0 4  OPTERA  0 0 1  AE  M 1 1 2  1 2  1 2  1 3  1 3  1 3  1 4  1 1 2  | ALL DIPTERA                             |     |        |     | 406           |
| A 21 21 20   | EPHEMEROPTERA                           |     |        |     |               |
| A 21 21 20  EROPTERA  DAE  1 0 4  OPTERA  0 0 1  AE  M  1 1 2  ENIDAE  ENIDAE  AE  CON 1  1 1 2  | EPHEMERIDAE                             |     |        |     |               |
| DAE  A DAE  1 0 4  OPTERA  0 0 1  AE  M  1 1 2  M  1 1 2   | HEXAGENIA                               | 21  | 21     | 50  |               |
| DPTERA  OPTERA  OPTERA  OPTERA  O 1  AE  S6 40 36  M  1 1 2  | 100000000000000000000000000000000000000 |     |        |     |               |
| DAE 1 0 4  OPTERA 0 1  AE 56 40 36  M 1 1 2  ENTIDAE ENTIDAE   | ALL EPHEMEROPIERA                       |     |        |     | 427           |
| DAE 1 0 4  OPTERA 0 0 1  AE 56 40 36  M 1 1 2  COUNTRY 1 1 2  COUNTRY 1 1 2  | TRICHOPTERA                             |     |        |     |               |
| DPTERA 1 0 4  OPTERA 0 1  AE 56 40 36  M 1 1 2  ENIDAE ENDA  | LEPTOCERIDAE                            |     |        |     |               |
| OPTERA 0 0 1  AE 56 40 36  M 1 1 2  ENIDAE ENDA  | OECETIS                                 | -   | 0      | 4   |               |
| AE 56 40 36 1 1 2 2 2 2 2 2 36   | ALL TRICHOPTERA                         |     |        |     | 34            |
| AE 56 40 36 M 1 1 2  | ACARINA                                 | 0   | 0      | -   |               |
| M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 2 M 1 1 1 2 M 1 1 1 2 M 1 1 1 2 M 1 1 1 1  | PELECYPODA                              |     |        |     |               |
| 56 40 36<br>1 1 1 2  | SPHAERIIDAE                             |     |        |     |               |
| 1 1 2<br>AE  | PISIDIUM                                | 26  | 40     | 36  |               |
| AE .   | THE CONTRACT                            | •   | •      | c   |               |
| AE   | EDAGE                                   | -   | -      | ٧   |               |
|  | ALL SPHAERIIDAE                         |     |        |     | 937           |

| ANE OF TOTAL TOTAL                   |    |             |          |               |
|--------------------------------------|----|-------------|----------|---------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 1 | g  | GRAB COUNTS | MTS      | FCTIMATED     |
| TAXON                                | -  | }<br>}      | 0        | NO./SQ. METER |
| CNIDARIA<br>Hydra                    | ٥  | -           | ٥        |               |
| ALL CNIDARIA                         |    |             |          | 7             |
| RHABDOCOELA                          | -  | -           | -        | 21            |
| NEMERTINEA                           | -  | -           | 0        | 4             |
| NEMATODA                             | 7  | 38          | 22       | 510           |
| OLIGOCHAETA<br>Spirosperma           | 0  | 4           | -        |               |
| OTHER<br>ALL OLIGOCHAETA             | 24 | ō           | Ø        | 331           |
| POLYCHAETA<br>Manayunkia speciosa    | 63 | 90          | iņ<br>iņ | 1543          |
| ALL POLYCHAETA                       |    |             |          | 1543          |
| CLADDCERA<br>ALGNA                   | -  | 0           | ٥        |               |
| DAPHNIA                              | -  | 4           | 0        |               |
| EURYCERCUS LAMELLATUS                | 0  | 8           | -        |               |
| HOLOPEDIUM                           | ď  | 13          | 8        |               |
| POLYPHEMUS PEDICULUS                 | 0  | -           | 0        |               |
| ALL CLADOCERA                        |    |             |          | 186           |

1

| MACROZOGBENTHOS PONAR GRAB COUNT DATA     |          |      |             | 10/10/84                   |
|---|----------|------|-------------|----------------------------|
| TRANSECT 13 STATION 1 (CONT.D)            |          |      |             |                            |
| TAXON                                     | <u> </u> | AB C | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| COPEPODA<br>HARPACTICOIDA                 | 0        | -    | LO.         |                            |
| MACROCYCLOPS                              | 0        | -    | •           |                            |
| ALL COPEPODA                              |          |      |             | 48                         |
| OSTRACODA                                 | 4        | Ξ    | e           | 124                        |
| AMPHI PODA<br>GAMMARUS                    | w        | -    | 0           | 4                          |
| ALL AMPHIPODA                             |          |      |             | 48                         |
| DIPTERA<br>CHIRONOMIDAE                   | 28       | 22   | 25          | 516                        |
| EPHEMEROPTERA<br>Ephemeridae<br>Hexagenia | 99       | 27   | 28          |                            |
| HEPTAGENI IDAE<br>STENONEMA               | -        | 0    | 0           |                            |
| ALL EPHEMEROPTERA                         |          |      |             | 592                        |
| TRICHDPTERA<br>LEPTOCERIDAE<br>OECETIS    | -        | 8    | 8           |                            |
| ALL TRICHOPTERA                           |          |      |             | 46                         |
| ACARINA                                   | 0        | -    | 0           |                            |
|   |          |      |             |                            |

| TRANSECT 13 STATION 1 (CONT.D)  GRAB COUNTS ESTIMATED  1 2 3 NO./SQ. METER  GASTROPODA  ANNICOLA  ANICONICA  A | MACROZOOBENTHOS PONAR GRAB COUNT DATA   |      |      |          | 10/10/84                |
|--|---|------|------|----------|-------------------------|
| GRAB COUNTS  1 4 5  IVESCENS  1 1 4 5  INCERA  SINCERA  AE  B 19 16  M  CERIIDAE  S 19 0  CERIIDAE  C 0 0   | TRANSECT 13 STATION 1 (CONT'D)          |      |      |          |                         |
| IVESCENS  1 1 4 55  SINCERA  PRICARINATA  OPODA  AE  BI 19 16  BI 10 0  CRIIDAE  OPODA  OPODA | TAXON                                   | GRAE | 20 % | NTS<br>3 | ESTIMATED NO./SQ. METER |
| IVESCENS  IVESCENS  I 1 1 0  SINCERA  TRICARINATA  OPODA  AE  ERIIDAE  A 0 0  CHODA  OPODA  O | GASTROPODA                              |      |      | ;        |                         |
| IVESCENS  1 1 0  SINCERA  TRICARINATA  OPODA  AE  ERIIDAE  VPODA   | AMNICOLA                                | -    | 4    | RU.      |                         |
| IVESCENS  1 1 0  2 0 0  SINCERA  TRICARINATA  OPODA  AE  ERIIDAE  YPODA  1 0 0  YPODA  | 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |      |      | ,        |                         |
| SINCERA  TRICARINATA  OPODA  AE  ERIIDAE  OYODA  OYODA  OYODA  | ELIMIA LIVESCENS                        | -    | -    | 0        |                         |
| SINCERA  SINCERA  TRICARINATA  OPODA  AE  ERIIDAE  YPODA  OYODA  | 111111111111111111111111111111111111111 |      |      |          |                         |
| SINCERA  TRICARINATA OPODA  AE  ERIIDAE  YPODA  OPODA  O   | GT A DELCO                              | n    | 0    | 0        |                         |
| TRICARINATA 0 1 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0  | VALVATA SINCERA                         | 0    | Ø    | -        |                         |
| TRICARINATA 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |   | )    | ı    |          |                         |
| AE  BS 19 16  BRIIDAE  S 1 0 0  CRIIDAE  O 1 0   | VALVATA TRICARINATA                     | 0    | -    | 0        |                         |
| AE 55 16 16 16 16 16 16 16 16 16 16 16 16 16   | ALL GASTROPODA                          |      |      |          | •                       |
| AE 5 19 16 16 17 10 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0  |   |      |      |          | 172                     |
| AE 19 16 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0   | PELECYPODA                              |      |      |          |                         |
| # 19 16<br>4 0 0<br>1 0 0<br>1 0 0   | SPHAERIIOAE                             |      |      |          |                         |
| AE 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | PISIDIUM                                | 10   | 6    | 9        |                         |
| V - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | COHAROTIN                               | •    | ,    | (        |                         |
| AE - 0 0 - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | 7    | >    | >        |                         |
| 0 0  | ALL SPHAERIIDAE                         |      |      |          | 606                     |
| 0 0  | UNIONIDAE                               |      |      |          | 200                     |
| 0 0  | LAMPSILIS                               | -    | 0    | 0        |                         |
| 0 - 0  | * * * * * * * * * * * * * * * * * * *   |      | ,    | )        |                         |
|  | OTHER                                   | 0    | -    | 0        |                         |
|  | ALL PELECYPODA                          |      |      | 1        | 317                     |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |              |             |      | 10/10/84      |
|---------------------------------------|--------------|-------------|------|---------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 2  | GR.          | GRAB COUNTS | INTS | ESTIMATED     |
| TAXON                                 | -            | 7           | 6    | NO./SQ. METER |
| RHABDOCOELA                           | 0            | -           | 0    | 7             |
| TRICLADIDA                            | 0            | 0           | -    |               |
| NEMATODA                              | <del>6</del> | 24          | 56   | 468           |
| JLIGOCHAETA                           | 6            | 8           | 69   | 1942          |
|                                       | φ            | 11          | ∞    | 213           |
| ALL POLYCHAETA                        |              |             |      | 213           |
| CLADDCERA<br>DAPI-NIA                 | •            | ø           | •    |               |
| HOLOPEDIUM                            | Ø            | 4           | ō    |               |
| ALL CLADOCERA                         |              |             |      | 213           |
| COPEPODA<br>HARPACTICOIDA             | 0            | ~           | 8    |               |
| MACROCYCLOPS                          | <b>S</b>     | -           | ო    |               |
| ALL COPEPODA                          |              |             |      | 83            |
| OSTRACODA                             | 0            | ~           | 0    | ۲             |

| TRANSECT 13 STATION 2 (CONT'D)  GRAB COUNTS ES  ALL AMPHIPODA  GAMMARUS  ALL AMPHIPODA  TERRESTRIAL INSECT  DIPTERA  CHIRONOMIDAE  EPHEMEROPTERA  EPHEMEROPTERA  EPHEMEROPTERA  EPHEMEROPTERA  EPHEMEROPTERA  LEPTOCETIS  ALL EPHEMEROPTERA  LEPTOCETIS  ALL GASTROPODA  ELIMIA LIVESCENS  ALL GASTROPODA  SPHAERIUM  SP | MACROZOOBENTHOS PONAR GRAB COUNT DATA   | _          |        |       | 10/10/84                              |
|--|---|------------|--------|-------|---------------------------------------|
| PODA L INSECT  | TRANSECT 13 STATION 2 (CONT'D)  | Q          | A8 C3  | S T N | CATAMATED                             |
| 2 0 L INSECT   | TAXON   | <b>5</b> — | }<br>} | , e   | NO./SQ. METER                         |
| PODA L INSECT  | AMPHI PODA<br>GAMMARUS  | •          | ٥      | c     | · · · · · · · · · · · · · · · · · · · |
| PODA<br>L INSECT 0 1<br>L INSECT 0 1<br>DAE 22 27 2<br>A 22 21 1<br>EROPTERA<br>DAE 2 1 1<br>OPTERA 0 1<br>IVESCENS 0 1<br>A 45 46 4   |   | •          | •      | •     | !                                     |
| L INSECT  DAE  BAA  ERA  AE  ERA  A  ERA  A  BOPTERA  OPTERA  A  A  A  A  A  A  A  A  A  A  A  A   | ALL AMPHIPODA   |            |        |       | 2                                     |
| ERA  ERA  A  EROPTERA  OPTERA  IVESCENS  A  A  A  A  A  A  A  A  A  A  A  A  A   | TERRESTRIAL INSECT  | 0          | -      | -     | 7                                     |
| ERA AE EROPTERA DAE 22 21 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1  | DIPTERA<br>CHIRONOMIDAE   | 22         | 27     | 28    | 530                                   |
| A E EROPTERA 22 21 1 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2   | EPHEMEROPTERA<br>EPHEMERIDAE  |            |        |       |                                       |
| EROPTERA  DAE  A  IVESCENS  O 1  IVESCENS  AE  AB  AB  AB  AB  AB  AB  AB  AB  AB  | HEXAGENIA   | 22         | 21     | 6     |                                       |
| DPTERA  OPTERA  IVESCENS  O 1  OPODA  AE  AF  AS  AS  AS  AS  AS  AS  AS  AS  AS   | ALL EPHEMEROPTERA   |            |        |       | 427                                   |
| DYERA  DPTERA  IVESCENS  OPODA  AE  AS  AS  AS  AS  AS  AS  AS  AS  A  | TRICHOPTERA   |            |        |       |                                       |
| IVESCENS 0 1   | DEFICERITY OF THE STATE OF THE | а          | -      | -     |                                       |
| IVESCENS 0 1 OPODA AE 45 46 4  | ALL TRICHOPTERA   |            |        |       | <b>58</b>                             |
| AE AE A5 46 4  | GASTROPODA<br>ELIMIA LIVESCENS  | 0          | -      | 0     | ٠                                     |
| AE 45 46 4   | ALL GASTROPODA  |            |        |       |                                       |
| 45 46 4 2 3  | PELECYPODA  |            |        |       |                                       |
| 2 3  | PISIDION  | 45         | 46     | 4     |                                       |
|  | SPHAERIUM   | 8          | n      | 0     |                                       |
|  | # 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |            |        |       |                                       |
| ALL SPHAERIDAE<br>ALL PELECYPODA   | ALL SPHAERIIDAE<br>All Pelecypoda   |            |        |       | 943                                   |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |      |             |      | 10/10/84                   |
|---------------------------------------|------|-------------|------|----------------------------|
| LAKE ST. CLAIR TRANSECT 13 STATION 3  | GRA- | GRAB COUNTS | JNTS | ESTIMATED<br>NO./SQ. METER |
| RHABDOCUELA                           |      | 8           | 0    | 4                          |
| NEMATODA                              | 6    | ∞           | 2    | 475                        |
| OLIGOCHAETA                           | 4 10 | 41          | 42   | 3436                       |
| POLYCHAETA<br>Manayunkia speciosa     | 23   | 0           | ٥    | 158                        |
| ALL POLYCHAETA                        |      |             |      | 158                        |
| CLADOCERA<br>BOSMINA                  | 8    | 0           | 8    |                            |
| DAPPAIA                               | -    | 0           | -    |                            |
| HOLOPEDIUM                            | ý    | 8           | -    |                            |
| ALL CLADGERA                          |      |             |      | 103                        |
|                                       | 0    | 0           | -    |                            |
| HARPACTICOIDA                         | 8    | 0           | 0    |                            |
| MACROCYCLOPS                          | Ξ    | 0           | -    |                            |
| MESOCYCLOPS                           | -    | 0           | 0    |                            |
| ALI. COPEPODA                         |      |             |      | 110                        |
| OSTRACODA                             | m    | 0           | 0    | 2                          |

| TRANSECT 13 STATION 3 (CONT'D)                             |                |             |          |                            |
|--|----------------|-------------|----------|----------------------------|
| TAXON  | GRAB<br>1      | GRAB COUNTS | HS<br>3  | ESTIMATED<br>NO./SQ. METER |
| AMPHI PODA<br>Gammarus                                     | <b>+</b>       | -           | 0        | 34                         |
| ALL AMPHIPODA  |                |             |          | 34                         |
| DIPTERA<br>CHIRONOMIDAE                                    | <b>4</b><br>R0 | ø           | 5        | 420                        |
| EPHEMEROPTERA<br>EPHEMERIDAE<br>Heyaafiya                  | 5              | ;           |          |                            |
| ALL EPHEMEROPTERA  | 3              | <u>!</u>    | <u>:</u> | 351                        |
| LEPTOCERIDAE<br>LEPTOCERIDAE<br>DECETIS<br>ALL TRICHOPTERA | 0              | 0           | a        | 4                          |
| GASTROPODA<br>CAMPELOMA<br>ALL GASTROPODA                  | -              | 0           | •        |                            |
| PELECYPODA<br>Sphaeridae<br>Pisidium                       | 82             | ဖ           | •        |                            |
| SPHAERIUM  | -              | 0           | -        |                            |
| ALL SPHAERIIOAE<br>ALL PELECYPODA                          |                |             |          | 675                        |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |              |             |            | 10/ 9/84                   |
|---------------------------------------|--------------|-------------|------------|----------------------------|
| DETROIT RIVER TRANSECT 14 STATION 1   |              | :           |            |                            |
| TAXON                                 | <b>8</b> ~   | GRAB COUNTS | UNTS<br>3  | ESTIMATED<br>NO./SQ. METER |
| 5                                     | +            | +           | +          | 1                          |
| ALL PORIFERA                          |              |             |            | 0                          |
| CNIDARIA<br>HYDRA                     | 57           | 36          | 58         | 840                        |
| ALL CNIDARIA                          |              |             |            | 840                        |
| TRICLADIDA                            | NO.          | 4           | 0          | 124                        |
| NEMERTINEA                            | 76           | 72          | <b>1</b> 0 | 1370                       |
| NEMATODA                              | ın           | -           | 0          | 7                          |
| BRYOZOA                               | 0            | +           | +          | +                          |
| OLIGOCHAETA<br>SPIROSPERMA            | •            | -           | 0          |                            |
| OTHER<br>ALL OLIGOCHAETA              | <del>0</del> | ID.         | φ          | 213                        |
| MANA YUNKIA SPECIOSA                  | •            | 8           | 0          | 7                          |
| ALL POLYCHAETA                        |              |             |            | 7                          |
| OSTRACODA                             | 0            | 0           | -          | 7                          |

| TRANSECT 14 STATION 1 (CONT'D)                                    |          |             |       |                            |
|---|----------|-------------|-------|----------------------------|
|   | GR.      | GRAB COUNTS | STAU  | ESTIMATED<br>NO./SQ. METER |
|   | -        | 8           | 6     | 4                          |
| ALL AMPHIPODA   |          |             |       | 4                          |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA         | 1 87     | 90          | 0 126 | 1605<br>1611               |
| EPHEMEROPTERA<br>BAETISCIDAE<br>BAETISCA<br><br>ALL EPHEMEROPTERA | •        | -           | 64    | 2                          |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche                   | <b>5</b> | 22          | 72    |                            |
| HYDROPSYCHE   | 89       | <b>8</b>    | 152   |                            |
| LEPTOCERIDAE<br>CERTOCEA<br>CERTOCEA                              | -        | ч           | 0     |                            |
| ALL TRICHOPTERA   |          |             |       | 2837                       |
| ACARINA   | 8        | -           | 0     | 21 .                       |
| GASTROPODA<br>Amvicola  | 27       | 23          | m     |                            |
| i –   | 37       | 8           | 21    |                            |
| FERISSIA  | 8        | -           | -     |                            |
| GYRAULUS  | ø        | 8           | -     |                            |
| PHYSA   | 8        | 0           | NO.   |                            |
| ALL GASTROPODA  |          |             |       | 1377                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA | OUNT DATA |          |             |     | 10/ 9/84      |
|---------------------------------------|-----------|----------|-------------|-----|---------------|
| TRANSECT 14 STATION 1 (CONT'D)        | 6         | GRA      | GRAB COUNTS | STA | ESTIMATED     |
|                                       |           | -        | 7           | 2 3 | NO./SO. METER |
| PELECYPODA                            |           |          |             |     |               |
| SPHAERIIDAE                           |           |          |             |     |               |
| PISIDIUM                              |           | <b>4</b> | 52          | ,   |               |
|                                       |           |          |             |     |               |
| SPHAERIUM                             |           | ø        | 9           | 0   |               |
|                                       |           |          |             |     |               |
| ALL SPHAERIIDAE                       |           |          |             |     | 634           |
| UNIONIDAE                             |           |          |             |     |               |
| TRUNCILLA TRUNCATA                    | -         | -        | -           | -   |               |
| 11111111111111111                     |           |          |             |     |               |
| OTHER                                 |           | 0        | ~           | 0   | ;             |
| ALL PELECYPODA                        |           |          |             |     | 899           |

| DETROIT BIVER TOANSECT 14 STATION 2      |     |             |          |                            |
|--|-----|-------------|----------|----------------------------|
|  |     | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| NEMERTINEA                               | 5   | 6           | 7        | 172                        |
| NEMATODA                                 | 0   | -           | 0        | 7                          |
| OLIGOCHAETA<br>Spirosperma               | •   | •           | c        |                            |
|  | 4   | •           | >        |                            |
| OTHER<br>ALL OLIGOCHAETA                 | စ္တ | 23          | 9        | 496                        |
| POLYCHAETA<br>Manayunkia speciosa        | 4   | 8           | on.      | 103                        |
| ALL POLYCHAETA                           |     |             |          | 103                        |
| CLADOCERA                                | -   | c           | c        |                            |
| ALL CLADOCERA                            | •   | >           | )        |                            |
| COPEPODA                                 |     |             |          |                            |
| DIAPTOMUS                                | -   | 0           | 0        | 7                          |
| ALL COPEPODA                             |     |             |          | ~                          |
| AMPHIPODA<br>GAMMARUS                    | 69  | 8           | m        | en<br>en                   |
| ALL AMPHIPODA                            |     | i           |          | in<br>In                   |
| DIPTERA<br>CHIRONOMIDAE                  | 0   | -           | -        | <del>-</del>               |
| EPHEMEROPTERA<br>Baetiscidae<br>Baetisca | •   | -           | 8        |                            |
| ALL EPHEMEROPTERA                        |     |             |          | ā                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |             |                      |      | 10/ 9/84                                |
|---|-------------|----------------------|------|---|
| TRANSECT 14 STATION 2 (CONT'D)                  | į           | į                    |      |   |
| TAXON   | CKAE        | GRAB COUNTS<br>1 2 3 | S E  | ESTIMATED NO./SQ. METER                 |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | ,<br>,<br>, | 4                    | . 37 | } 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| ALL TRICHOPTERA                                 |             |                      | _    | 303                                     |
| ACARINA   | 8           | 0                    | 0    | 4                                       |
| GASTROPODA<br>AMNICOLA                          | φ           | -                    | 4    |   |
| ELIMIA LIVESCENS                                | -           | -                    | вD   |   |
| FRISSIA   | 0           | -                    | 0    |   |
| ALL GASTROPODA                                  |             |                      |      | 131                                     |
| PELECYPODA<br>Sphaeriidae                       |             |                      |      |   |
| PISIDION  | <b>I</b> O  | <b>®</b>             | 4    |   |
| SPHAERIUM                                       | <b>+</b>    | 0                    | 0    |   |
| ALL SPHAERIIDAE<br>ALL PELECYPODA               |             |                      |      | 124                                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA           |      |             |     | 10/ 9/84      |
|---|------|-------------|-----|---------------|
| DETROIT RIVER TRANSECT 14 STATION 3             | GRAB | GRAB COUNTS | ITS | ESTIMATED     |
| TAXON   | -    | 2           | 6   | NO./SQ. METER |
| NEWERTINEA                                      | 0    | 7           | 8   | 28            |
| NEMATODA  | w    | ď           | 9   | 96            |
| OLIGOCHAETA<br>Branchiura soverbyi              | ٥    | -           | -   |               |
| SPIROSPERMA                                     | -    | 4           | ო   |               |
| OTHER<br>ALL OLIGOCHAETA                        | 8    | 14          | ន   | 1061          |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA               | 0    | ~           | ო   | 34            |
| ALL POLYCHAETA                                  |      |             |     | 34            |
| AMPHIPODA<br>GAMMARUS                           | -    | 0           | 0   | 1             |
| ALL AMPHIPODA                                   |      |             |     | 1             |
| TERRESTRIAL INSECT                              | -    | 0           | 0   | 7             |
| DIPTERA<br>CHIRONOMIDAE                         | 8    | 60          | 4   | 62            |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | **   | 0           | 0   |               |
| ALL TELCHIETERA                                 |      |             |     | 7             |

| MACROZOORENTHOS PONAR GRAB COUNT DATA |      |             |          | 10/ 9/84                              |
|---------------------------------------|------|-------------|----------|---------------------------------------|
| TRANSECT 14 STATION 3 (CONT'D)        |      |             |          |                                       |
| TAXON                                 | GRAB | GRAB COUNTS | s        | ESTIMATED                             |
|                                       | - 1  | 2           | <b>C</b> | NO./SQ. METER                         |
| GASTROPODA                            |      |             |          | # # # # # # # # # # # # # # # # # # # |
| ELIMIA LIVESCENS                      | თ    | ហ           | ល        | 131                                   |
| ALL GASTROPODA                        |      |             |          | 131                                   |
| PELECYPODA                            |      |             |          |                                       |
| SPHAERIIDAE                           |      |             |          |                                       |
| PISIDIUM                              | g    | 6           | 4        |                                       |
|                                       | ,    | ı           | •        |                                       |
| SPHAERIUM                             | 0    | c           | _        |                                       |
|                                       | ,    | ,           |          |                                       |
| ALL SPHAERIIDAE                       |      |             |          | 5                                     |
| ALL PELECYPODA                        |      |             |          | 3 5                                   |

| TRANSECT 15 STATION 1  GRAB COUNTS  1 2 3 NO  + + + + +  + + + +  1 0 0  16 10 4  16 10 4  16 10 4  16 10 7  17 17  21 10  22 1 0  32 30 33 | MACROZOOBENTHOS PO         | MACROZOGBENTHOS PONAR GRAB COUNT DATA |         |    |     | 10/10/84      | /84   |
|---|----------------------------|---------------------------------------|---------|----|-----|---------------|-------|
| 1 2 3<br>1A + + + + + + + + + + + + + + + + + + +   | DETROIT RIVER              | TRANSECT 15 STATION 1                 | 8888    |    | STS | ESTIMA        | LED   |
| HARTA   | TAXON                      |                                       | -       | 2  | 6   | NO./SQ.       | METER |
| 35 30 22<br>1A<br>1 0 0<br>16 10 4<br>9 5 2<br>20 8 15<br>+ + 0<br>2 1 0<br>32 30 33  | PORIFERA<br>SPONGILLA      |                                       | +       | +  | +   | +             |       |
| 35 30 22  IA  1 0 0  16 10 4  9 5 2  20 8 15  + + 0  2 1 0  32 30 33  | ALL PORIFERA               |                                       |         |    |     | 0             |       |
| 1 0 0 1 16 10 4 9 5 2 2 20 8 15 + + 0 17 17 17 17 17 17 17 17 17 17 17 17 17  | CNIDAR1A<br>HYDRA          |                                       |         | 9  | 22  | 35<br>89<br>9 |       |
| 1 0 0 16 10 4 9 5 2 2 20 8 15 + + 0 17 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18   | ALL CNIDARIA               |                                       |         |    |     | 599           |       |
| 16 10 4 9 5 2 20 8 15 + + 0 17 2 1 0 32 30 33   | RHABDOCOELA                |                                       | -       | 0  | 0   | 7             |       |
| A   | TRICLADIDA                 |                                       | 9       | 9  | 4   | 207           |       |
| 20 8 15<br>+ + 0<br>PERMA<br>2 1 0<br>1A<br>32 30 33  | NEMERT INEA                |                                       | ø.      | ស  | 7   | 110           |       |
| MA 54 17 17 17 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18   | NEMATODA                   |                                       | 8       | ∞  | ŧ.  | 296           |       |
| MA 54 17 17 17 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18   | BRYOZOA                    |                                       | +       | •  | 0   | •             |       |
| 32 30 33  | OLIGOCHAETA<br>Spirosperma |                                       | 10<br>4 | 17 | 1   |               |       |
| 32 30 33  | STYLARIA                   |                                       | 6       | -  | 0   |               |       |
|   | OTHER<br>ALL OLIGOCHAFIA   |                                       | 32      | 30 | 33  | 1281          |       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |             |             | 10/10/84      |
|---------------------------------------|-----|-------------|-------------|---------------|
| TRANSECT 15 STATION 1 (CONT'D)        | æ   | GRAB COUNTS | UNTS        | ESTIMATED     |
|                                       | -   | 8           | n           | NO./SQ. METER |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA     | ø   | -           | 0           | 8             |
| ALL POLYCHAETA                        |     |             |             | 84            |
| COPEPODA<br>DIAPTOMUS                 | 0   | 7           | 8           | <b>58</b>     |
| ALL COPEPODA                          |     |             |             | 28            |
| AMPHI PODA<br>GAMMARUS                | 23  | 86<br>80    | 46          | 130           |
| ALL AMPHIPODA                         |     |             |             | 730           |
| TERRESTRIAL INSECT                    | •   | 0           | 0           | •             |
| DIPTERA<br>CHIRONOMIDAE               | 223 | 421         | 440         | 7465          |
| EPHEMEROPTERA<br>CAENIDAE             | !   | ,           | •           |               |
| CAENIS                                | 0   | O)          | <b>60</b>   |               |
| EPHEMER I DAE<br>HEXAGEN I A          | -   | 0           | 0           |               |
| BAETISCIDAE<br>BAETISCA               | -   | -           | <del></del> |               |
| ALL FOMEMEROPTERA                     |     |             |             | 275           |

| FRA FERA FERA FERA FERA FERA FERA FERA F   |   |     |           |      |               |
|--|---|-----|-----------|------|---------------|
| ENS 128 80 122 205 190 122 205 190 13 13 12 8 12 8 14 15 24 11 2 1   | TRANSECT 15 STATION 1 (CONT'D)          | a   | AR COL    | NT N | FSTIMATED     |
| TDAE  SYCHE  122 205 190  HE  1 0 2  2 0 1  0 1 0  10AE  A  PTERA  PTERA  O 1 0  1 0 7  38 30 13  2 0 0  17 15 21  1900A  HE  11 0 0  11 1 0  11 1 1 1 1 1 1 1 1 1 1   | TAXON                                   | -   | 7         | e    | NO./SQ. METER |
| PSYCHE  PSYCHE  CHE  LIDAE  LIDAE  LA  OPTERA  OPTERA  OPTERA  AE  AE  This is a second secon | RICHOPTERA                              |     |           |      |               |
| CHE  CHE  122 205 190  DAE  LIDAE  LA  OPTERA  OPTERA  OPTERA  OPTERA  OPTERA  AF  AF  AF  AF  AF  AF  AF  AF  AF  | CHEUMATOPSYCHE                          | 105 | 129       | 8    |               |
| LIDAE LA OPTERA  | HYDROPSYCHE                             | 122 | 205       | 190  |               |
| LIDAE LA OPTERA  |   |     |           |      |               |
| LIDAE LA OPTERA  | CERACLEA                                | -   | 0         | 8    |               |
| LIDAE LA OPTERA  | OECETIS                                 | 8   | 0         | -    |               |
| LIDAE LA OPTERA  |   | •   | •         | (    |               |
| LIDAE LA OPTERA  | SETODES                                 | 0   | -         | 0    |               |
| DPTERA  OPTERA  OPTERA | RHYACOPHILIDAE                          |     |           |      |               |
| OPTERA  OPTERA  O 1 0  1 0 1 0  1 VESCENS  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | PROTOPTILA                              | N   | -         | 0    |               |
| 38 30 13<br>2 0 0<br>1VESCENS<br>17 15 21<br>13 12 8<br>1 0 0<br>1 0 0<br>1 1 2 1  | ALL TRICHOPTERA                         |     |           |      | 5782          |
| 38 30 13 2 0 0 IVESCENS 17 15 21 1 0 0 0PODA 44 51 24  | CARINA                                  | 0   | -         | 0    | •             |
| 1VESCENS 17 15 21 13 12 8 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | ASTROPODA<br>AMNI COLA                  | 38  | 30        | 5    |               |
| 1VESCENS 17 15 21 17 15 21 18 12 8 17 10 0 0 0000A 17 15 24 11 2 1   | 1 |     |           | ,    |               |
| 17 15 21 19 12 8 1 0 0 1 0 0 1 1 2 1 11 2 1  | BITHYNIA                                | 8   | 0         | 0    |               |
| 13 12 8<br>1 0 0<br>1 0 0<br>1 44 51 24  | ELIMIA LIVESCENS                        | 11  | 15        | 7    |               |
| 1 0 0 †  OPODA  AE  AE  11 2 1   | GYRAULUS                                | 13  | 12        | •    |               |
| OPODA AE AE A1 51 24   |   | -   | 0         | 0    |               |
| AE 44 51 24 11 2 4   | ALI GASTROPODA                          |     | ļ         |      | 1171          |
| AE 44 51 24 M 11 2 1   | PELECYPODA                              |     |           |      |               |
| 44 51 24   | SPHAERIIDAE                             |     |           |      |               |
| 11 2 1   | PISIDIUM                                | ‡   | <b>10</b> | 24   |               |
|  | SPHAERIUM                               | =   | 7         | -    |               |
|  |   |     |           |      | 9+0           |

| MACRUZUOBENTHUS PONAR GRAB COUNT DATA |          |       |     | 10/10/84      |
|---------------------------------------|----------|-------|-----|---------------|
| DETROIT RIVER TRANSECT 15 STATION 2   | Ġ        | į     |     |               |
| TAXON                                 | ¥<br>5 - | 4 2 3 | / E | NO./SQ. METER |
| CNIDARIA<br>HYDRA                     | 33       | 92    | 60  | 916           |
| ALL CNIDARIA                          |          |       |     | 916           |
| TRICLADIDA                            | 0        | 0     | -   | 1             |
| NEMERTINEA                            | 4        | ID.   | 9   | 103           |
| NEMATODA                              | 99       | 2     | 0   | 620           |
| OLIGOCHAETA<br>Spirosperma            | 8        | •     | -   |               |
| OTHER<br>ALL OLIGOCHAETA              | 6        | 0     | õ   | 331           |
| MANAYUNKIA SPECIOSA                   | -        | 0     | -   | <b>:</b>      |
| ALL POLYCHAETA                        |          |       |     | <b>=</b>      |
| COPEPODA DIAPTOMUS                    | -        | 0     | -   | ī             |
| ALL COPEPODA                          |          | •     |     | 7             |
| TERRESTRIAL INSECT                    | 0        | 0     | -   | 1             |
| DIPTERA                               | -        | c     | c   | ۴             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA    |     |       | 10/10/84      |
|--|-----|-------|---------------|
| TRANSECT 15 STATION 2 (CONT'D)           | 6   | 1     | 22            |
| TAXON                                    |     | 1 2 3 | NO./SQ. METER |
| EPHEMEROPTERA<br>BAETISCIDAE<br>BAETISCA | 6   | 0     |               |
| ALL EPHEMEROPTERA                        |     |       | 2             |
| TRICHOPTERA<br>TRICHOPTERA               | -   | 0     |               |
| HTOROTSTONE CHEURA TOPSYCHE              | 183 | 79 92 |               |
| HYDROPSYCHE                              | =   | 4     |               |
| ALL TRICHOPTERA                          |     |       | 2562          |
| GASTROPODA<br>AMNICOLA                   | •   | 0     |               |
| ELIMIA LIVESCENS                         | 31  | 04    |               |
| -  |     |       | 500           |
| PELECYPODA<br>SPHAERIIDAE<br>PISIDIUM    |     | 98    |               |
| SPHAERIUM                                | m   | 0     |               |
| œ  | •   | •     | 427           |
| OTHER<br>ALL PELECYPODA                  | 0   | 0     | 448           |
|  |     |       |               |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |            |     | 10/10/84      |
|---------------------------------------|-----|------------|-----|---------------|
| DETROIT RIVER TRANSECT 15 STATION 3   | ě   | 5          |     |               |
| TAXON                                 | -   | 4 2 3      | 200 | NO./SQ. METER |
| CNIDARIA<br>Hydra                     | 167 | <b>3</b> 6 | 9   | 1336          |
| ALL CNIDARIA                          |     |            |     | 1536          |
| TRICLADIDA                            | N)  | -          | 0   | 7             |
| NEMERTINEA                            | 0   | =          | 42  | 427           |
| NEMATODA                              | ø   | <b>10</b>  | 21  | 220           |
| OLIGOCHAETA<br>Spirosperma            | ø   | <b>S</b>   | ž.  |               |
| OTHER<br>ALL OLIGOCHAETA              | ^   | <b>s</b> n | 5   | 475           |
| POLYCHAETA<br>Manayunkia speciosa     | 5   | -          | 0   | 08            |
| ALL POLYCHAETA                        |     |            |     | 8             |
| CLADOCERA<br>BOSMINA                  | ч   | 0          | 0   |               |
| DAPHNIA                               | 0   | -          | 0   |               |
| ALL CLADOCERA                         |     |            |     | 21            |
| OSTRACODA                             | -   | 0          | 0   | 7             |

| OMIDAE  OMIDAE  OMIDAE  CONTON  OMIDAE  SCA  HEMEROPTERA  CIDAE  SCA  HEMEROPTERA  SYCHIDAE  ATOPSYCHE  ERIDAE  LEA  LEA  LICA  ODA  ODA  ODA  ODA  ODA  ODA  ODA  O   |          |     |                            |
|--|----------|-----|----------------------------|
| AE ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPODA ROPTERA ROPTERA ROPTERA ROPTERA ROPTERA ROPTERA ROPODA ROPTERA ROPT | (CONT'D) |     |                            |
| OMIDAE  OMIDAE  COLAE  SCA  HEMEROPTERA  TERA SYCHIE  ATOPSYCHE  PSYCHE  LEA  TCHOPTERA  TO 0  TCHOPTERA  TCHO | GRAB CO  | S E | ESILMATED<br>NO./SQ. METER |
| B 2 6  ROPTERA  SYCHE  SYCHE  SYCHE  AE  AE  AE  AE  AE  AE  AE  AE  AE  | 7        | 0   | 21                         |
| E ROPTERA  ROPTERA  FOR 210 153  SYCHE  SYCHE  A  A  PTERA  PTERA  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0 2  1 0 0 3  1 0 0 3  1 0 0 3  |          |     |                            |
| SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCHE SYCH SYCH SYCH SYCH SYCH SYCH SYCH SYCH  |          | u   |                            |
| TOPTERA  ROPTERA  1DAE  A  A  PTERA  1 0 0  1 10 0  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0  2 0 1  1 0 0 0  2 0 1  1 0 0 0  2 0 0  3 0 0 7  4 0 0 0  5 0 0 0  6 0 0 0  7 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  8 0 0 0  9 0 0 0  8 |          | Þ   |                            |
| 1DAE SYCHE TOO 210 153 SYCHE HE AE A A A A  |          |     | 110                        |
| 1DAE SYCHE SYCHE SYCHE  SYCHE  A  AE  AE  AE  A  1 0 0  1 0 0  A  PTERA  TO 0 0  TO 0 2  TO 0 0  TO 0  |          |     |                            |
| PSYCHE  PSYCHE  BAE  CHE  BAE  CHE  BAT 16 6  1 0 0 0  1 0 0  1 0 0 0  |          |     |                            |
| CHE  CHE  CHE  CHE  CHE  CHE  CHE  CHE   |          |     |                            |
| DAE  DAE  LIDAE  LA  OPTERA  1 0 0 0  1 0 0 0  1  |          | ų   |                            |
| DAE  LIDAE  LIDAE  LA  OPTERA  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  1 0 0  |          | •   |                            |
| LIDAE LA OPTERA  1 0 0 1 0 0 1 0 0 1 0 |          |     |                            |
| LIDAE LA OPTERA  1 0 0 1 0 0 1 0 0 2 0 0 2 1 VESCENS 0 0 0 2 1 VESCENS 0 0 0 35 0 0 0 7 0 0 0 2 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0  |          | -   |                            |
| LIDAE LA OPTERA  1 0 0 1 0 0 2 1VESCENS 0000A  AE 10 9 35  |          |     |                            |
| LIDAE  LA  OPTERA  1 0 0  1 0 0  1 VESCENS  OPODA  AE  1 0 0 2  1 0 0 7  0 0 0 7  0 0 0 7  0 0 0 7  0 0 0 7  0 0 0 7  0 0 0 0  | 0        | 0   |                            |
| 1 0 0  IVESCENS  1 0 0  1 0 0  2 0 0  AE  1 0 0  2 0 3   |          |     |                            |
| 1VESCENS   | 0 +      | 0   |                            |
| DPTERA  1 0 0  1 VESCENS  0 0 2   0P00A  AE  10 9 35   |          |     |                            |
| 1VESCENS 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   |          |     | 8 106                      |
| 1 VESCENS 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | •        | 0   | 1                          |
| 1VESCENS 90 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |          |     |                            |
| 1 VESCENS  OPODA  AE  AE  10 9   |          | 7   |                            |
| 10 00 00 00 00 00 00 00 00 00 00 00 00 0   |          | r   |                            |
| 0P00A AE 10 9 M 2 0  |          | -   |                            |
| AE 10 9 M 2 0 0 10 10 10 10 10 10 10 10 10 10 10 10  |          |     | 124                        |
| 10 9   |          |     |                            |
| n 0  |          | Č   |                            |
| 2 0  |          | ņ   |                            |
|  |          |     |                            |
|  |          |     | 908                        |
| ALL SPHAEKIJUAE  |          |     | 5                          |
| ▼ COO  |          |     | 420                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |          |       |     | 10/ 9/84      |
|---|----------|-------|-----|---------------|
| DETROIT RIVER TRANSECT 16 STATION 1   | GRAE     | 500   | SI  | ESTIMATED     |
| 7   | -        | 1 2 3 | 6   | NO./SQ. METER |
| CNIDARIA<br>HYDRA   | <b>9</b> | 0     | 0   | 62            |
| ALL CNIDARIA  |          |       |     | 62            |
| RHABDOCOELA   | 23       | 27    | 32  | 565           |
| TRICLADIDA  | 8        | 0     | -   | 21            |
| NEMATODA  | 148      | 51    | 57  | 1804          |
| HIRUDINEA<br>ERPOBDELLIDAE  | •        | -     | -   |               |
| GLOSSIPHONIIDAE<br>HELOBDELLA ELONGATA  | 6        | -     | 0   |               |
| ALL HIRUDINEA   |          |       |     | 48            |
| OLIGOCHAETA<br>Nais   | 0        | 0     | •   |               |
| SPIROSPERMA   | •        | 0     | -   |               |
| STYLARIA  | 8        | 95    | 93  |               |
| OTHER<br>ALL OLIGOCHAETA  | 178      | 260   | 264 | 6797          |
| CLADOCERA<br><ida crystallina<="" td=""><td>12</td><td>-</td><td>•</td><td>145</td></ida> | 12       | -     | •   | 145           |
| ALL CLADOCERA   |          |       |     | 145           |

| 2 | ė. |   |   |
|---|----|---|---|
| ٩ | ı  | ۶ | ٠ |
|   |    |   |   |
|   |    |   |   |
|   |    |   |   |

| 16 STATION 1 (CONT'D)  S AZTECA IPODA ODA GONIDAE E               | AB C 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | GRAB COUNTS 1 2 3 0 0 1 4 11 7 4 12 0 | ESTIMATED NO./SQ. METE 7      |
|---|--|---------------------------------------|-------------------------------|
| S A AZTECA 1 IPODA ODA GONIDAE E                                  | 7  | 2 t 2 t 0                             | NO./SQ. METER NO./SQ. METER 7 |
| S<br>A AZTECA<br>1PODA<br>1PODA<br>ODA<br>GONIDAE<br>1DAE         | <b>!</b>                                   |                                       | 358                           |
| PA<br>RUS<br>PHIPODA<br>PUS<br>C<br>PUS<br>OPODA<br>OMIDAE<br>DAE | ± 4 - 1-                                   | ~                                     | 358<br>62                     |
| FUS<br>FULA AZTECA<br>FULDODA<br>PUS<br>OPODA<br>OMIDAE<br>OMIDAE | <del>-</del> 4 ~ ~                         | -                                     | 358<br>62                     |
| LLA AZTECA PHIPODA US OPODA OMIDAE OMIDAE                         | 4 -  | •                                     | 358<br>62                     |
| PHIPODA US OPODA OMIDAE DAR                                       | ₽-   |                                       | 358<br>62                     |
| US<br>OPODA<br>POGONIDAE<br>OMIDAE<br>DAE                         | -  |                                       | 62                            |
| OPODA<br>OPODA<br>OMIDAE<br>OMIDAE                                | •  |                                       | ž                             |
| OPODA<br>POGONIDAE<br>OMIDAE<br>DAE                               |  |                                       |                               |
| POGONIDAE<br>DMIDAE<br>DAE  |  |                                       | 62                            |
|   | •  | 0                                     |                               |
|   | 324  | 200                                   | 5124                          |
| CHADBORUS   | -  | 0                                     |                               |
| ALL DIPTERA   |  |                                       | 5165                          |
| EPHEMEROPTERA   |  |                                       |                               |
| CAENIS  | 0  | -                                     |                               |
| EPHEMERIDAE   |  |                                       |                               |
| HEXAGENIA   | _  | 0                                     | •                             |
| ALL EPHEMEROPTERA   |  |                                       | 78                            |
| LEPIDOPTERA   |  |                                       |                               |
| PYRALIDAE   | 0  | 0                                     | 7                             |
| ALL LEPIDOPTERA   |  |                                       | 7                             |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA    |      |             |    | 10/ 9/84      |
|--|------|-------------|----|---------------|
| TRANSECT 16 STATION 1 (CONT'D)           | GPAB | CDAR COUNTS |    | ESTIMATED     |
| TAXON                                    | -    | 2           |    | NO./SQ. METER |
| TRICHOPTERA                              |      |             |    |               |
| NECTOPSYCHE                              | -    | 0           | ٥  |               |
| 0ECET1S                                  | 00   | 0           | -  |               |
|  |      |             |    |               |
| POLYCENTROPODIOAE<br>PHYLOCENTROPUS      | •    | e           | _  |               |
|  |      |             |    | ,             |
| ALL TRICHOPTERA                          |      |             |    | 131           |
| GASTROPODA                               | !    |             | ,  |               |
| AMMICOLA                                 | 32   | 11          | 9  |               |
| \$ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | ď    | •           | r. |               |
| GYRAULUS                                 | 0    |             | 2  |               |
| PHYSA                                    | 34   | ın          | 13 |               |
| PLEUROCERA ACUTA                         | 0    | 0           | -  |               |
|  |      |             |    |               |
| ALL GASTROPODA                           |      |             |    | 1970          |
| PELECYPODA                               |      |             |    |               |
| SPHAERI IDAE<br>PISTOTUM                 | 5    | 0           | 0  | 89            |
| 1  |      |             |    | ;             |
| ALL PELECYPODA                           |      |             |    | 89            |

| DETROIT RIVER TRANSECT 16 STATION 2           |      |             |              |                            |
|---|------|-------------|--------------|----------------------------|
| TAXON   | - 68 | GRAB COUNTS | UNTS<br>3    | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA<br>HYDRA                             | 0    | ٥           | -            | 7                          |
| ALL CNIDARIA                                  |      |             |              | 7                          |
| RHABDOCOELA                                   | 7    | 9           | 21           | 262                        |
| TRICLADIDA                                    | 11   | 8           | 5            | 200                        |
| NEMERTINEA                                    | N)   | -           | <del>.</del> | 165                        |
| NEMATODA                                      | 134  | 69          | 190          | 2706                       |
| HIRUDINEA<br>ERPOBDELLIDAE<br>GIOSSIDHONITDAE | -    | 0           | 0            |                            |
| ACTINOBDELLA INEQUIANNULATA                   | -    | 0           | 0            |                            |
| GLOSSIPHONIA HETEROCLITA                      | 0    | 0           | -            |                            |
| ALL HIRUDINEA                                 |      |             |              | 21                         |
| OL I GOCHAETA<br>Spirosperma                  | -    | ∞           | Ø            |                            |
| STYLARIA                                      | =    | 0           | -            |                            |
| OTHER<br>ALL DITCHAFTA                        | 168  | 8           | 289          | 3912                       |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |        |             |     | 10/ 9/84               |
|---------------------------------------|--------|-------------|-----|------------------------|
| TRANSECT 16 STATION 2 (CONT'D) TAXON  | GRA    | GRAB COUNTS | STS | ESTIMATED NO /SO METER |
| CLADOCERA<br>SIDA CRYSTALLINA         | 33     | 4           | 60  | 310                    |
| ALL CLADOCERA                         |        |             |     | 310                    |
| COPEPODA<br>Harpacticoida             | 2      | 0           | 0   | 165                    |
| ALL COPEPODA                          |        |             |     | 165                    |
| AMPHIPODA<br>Gammarus                 | 21     | 0           | 4   |                        |
| -                                     | φ      | a           | 0   |                        |
| ALL AMPHIPODA                         |        |             |     | 296                    |
| I SOPODA<br>ASELLUS                   | ø      | 0           | =   | 117                    |
| ALL ISOPODA                           |        |             |     | 117                    |
| TERRESTRIAL INSECT                    | -      | 0           | 0   | 7                      |
| DIPTERA<br>CLERATOPOGONIDAE           | ٥      | 0           | 9   |                        |
| CHIMOMORIDAE<br>ALL DIPTERA           | 5      | :           | •   | 1749                   |
| EPHEMEROPTERA<br>Caenidae             |        |             |     |                        |
| CAENIS                                | -      | -           | 0   |                        |
| EPHEMERIDAE<br>Heyarata               | 9      | 7.          | œ   |                        |
| TENERAL                               | h<br>- | •           | 0   |                        |
| ALL EPHEMEROPTERA                     |        |             |     | 386                    |

| T 16 STATION 2 (CONT'D)  GRAB CGUNTS ES  TERA ERIDAE  IS  NTROPODIDAE  CENTROPUS  ENTROPUS  CENTROPUS  CENTROPUS  CENTROPUS  CENTROPUS  CENTROPUS  CENTROPUS  CENTROPUS  CONTROPUS  CONTROP | MACKUZUUBENIFUS PUNAK GRAB CUUNI DAIA   |           |             |     | 10/ 9/84                            | 84          |
|--|---|-----------|-------------|-----|-------------------------------------|-------------|
| TERA TERA TERA TERA TERA TERA TERA TERA  | TRANSECT 16 STATION 2 (CONT'D)          |           |             | ,   |                                     |             |
| ERIDAE  IS  ERIDAE  IS  IS  ICHOPIERA  A LIVESCENS  A LIVESCENS  I 0 0  CERA ACUTA  STROPODA  STROPODA  I 10 A  I 1 C  I 0 C  I 0 C  I C  I C  I C  I C  I   | TAXON                                   | GRAB<br>1 | 5<br>0<br>7 | 3 6 | ESTIMAT<br>NO./50.                  | ED<br>METER |
| 3 0 2 PPODIDAE ROPUS OPTERA  19 2 40 1VESCENS RA ACUTA OPODA  6 1 0 0 1 1 6 1 0 0 1 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0 1  | TRICHOPTERA<br>LEPTOCERIDAE             | †<br>     |             | 1 1 | ,<br> <br> <br> <br> <br> <br> <br> |             |
| NTROPODIDAE  CENTROPUS  CENTROPUS  CHAPTERA  3 1 1  DDA  LIVESCENS  1 0 0  1 0 1  CLUS  CERA ACUTA  TIONE  TIONE  TIONE  PHAERIIDAE  DAA  TO T   | OECETIS                                 | 69        | 0           | 7   |                                     |             |
| ENTROPUS  ENTROPUS  ICHOPTERA  3 1 1  DDA  OLA  LIVESCENS  A LIVESCENS  COERA ACUTA  STROPODA  ODA  TIOAE  IUM  PHAERIIDAE  DAE  | POLYCENTROPODIDAE<br>PHYLOCENTROPODIOAE | a         | . 0         | •   |                                     |             |
| CHOPTERA  1CHOPTERA  3 1 1  0DA  0LA  0LA  LUS  CCERA ACUTA  STROPODA  110AE  1 |   | 0         | ħ           | 4   |                                     |             |
| 1CHOPTERA  3 1 1  DDA  OLA  LUS  LUS  CERA ACUTA  STROPODA  ODA  11 0 0  11 0 1  COERA ACUTA  TIONE  TIONE  PHAERIIDAE  1 0 0  1 0 0  PHAERIIDAE  1 0 0  | POLYCENTROPUS                           | ~         | 0           | 0   |                                     |             |
| DDA OLA OLA A LIVESCENS 1 0 0 1 LUS LUS CCERA ACUTA TIDAE TI | ALL TRICHOPTERA                         |           |             |     | 193                                 |             |
| 19 2 40  1VESCENS  1 0 0  1 0 1  2 0 5  RA ACUTA  1 1 6  DPODDA  AE  ERIIDAE  1 0 0  0 1 0   | ACARINA                                 | ო         | -           | -   | 34                                  |             |
| 1  | GASTROPODA                              |           |             |     |                                     |             |
| TVESCENS  1 0 0  1 0 1  2 0 5  RA ACUTA  1 1 6  OPODA  AE  ERIIDAE  1 0 0  | AMNICOLA                                | 19        | 8           | 9   |                                     |             |
| RA ACUTA 1 1 6 97 97 97 97 97 97 97 97 97 97 97 97 97  | ELIMIA LIVESCENS                        | -         | 0           | 0   |                                     |             |
| AE ACUTA 1 1 6 0 95 0 95 0 95 0 95 0 95 0 95 0 95 0  | GYRAULUS                                | -         | 0           | -   |                                     |             |
| RA ACUTA  1 1 6  OPODA  AE  ERIIDAE  1 0 0   | ANYM                                    | 7         | 0           | ឆ   |                                     |             |
| 0P00A  AE  BM  CO 1 0  ERIIDAE  1 0 0  | PLEUROCERA ACUTA                        | -         | -           | . • |                                     |             |
| AE 23 50 37 M 0 1 0 ERIIDAE 1 0 0  | ALL GASTROPODA                          |           |             |     | 544                                 |             |
| 23 50 37<br>0 1 0<br>11DAE   | PELECYPODA                              |           |             |     |                                     |             |
| ERIIDAE 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | SPHAERIJOAE<br>PISIDIUM                 | 23        | 50          | 37  |                                     |             |
| ERIIDAE 1 0 0  |   | ,         |             | ,   |                                     |             |
| ERIIDAE 1 0 0  | SPHAERIUM                               | 0         | -           | 0   |                                     |             |
| 0 0 -  | ALL SPHAERIIDAE                         |           |             |     | 764                                 |             |
|  | UNIONIDAE                               | -         | 0           | 0   |                                     |             |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |             |       | 10/ 9/84           |
|---------------------------------------|------------|-------------|-------|--------------------|
| DETROIT RIVER TRANSECT 16 STATION 3   | GRA        | GRAB COUNTS | NTS 8 | ESTIMATED NO VETER |
| RMABDOCOELA                           | 12         | N           | -     | 103                |
| NEMERTINEA                            | 0          | 0           | 4     | 28                 |
| NEMATODA                              | 37         | ស           | ស     | 324                |
| OL I GOCHAETA<br>Spirosperma          | Ξ          | 8           | -     |                    |
| STYLARIA                              | 0          | 0           | -     |                    |
| OTHER<br>ALL OLIGOCHAETA              | 81         | 90          | 8     | 2197               |
| POLYCHAETA MANAYUWKIA SPECIOSA        | <b>5</b> 6 | 5           | v     | 303                |
| CLADOCERA BOSMINA                     | 0          | 0           | -     | 3                  |
| EURYCERCUS LAMELLATUS                 | 4          | 0           | 0     |                    |
| CRYSTAL                               | -          | 0           | 0     |                    |
| ALL CLADOCERA                         |            |             |       | 7                  |
| COPEPODA<br>EPISHURA LACUSTRIS<br>    | -          | 0           | 0     | <b>,</b> ,         |
| AMPHIPODA<br>GAMMARUS                 | 0          | -           | 0     |                    |
| ALL AMPHIPODA                         |            |             |       | 7                  |

| TRANSECT 16 STATION 3 (CONT'D)          | Č    | Š     |             |               |
|---|------|-------|-------------|---------------|
| TAXON                                   |      | 1 2 3 | n m         | NO./SQ. METER |
|   | <br> |       | !<br>!<br>! | ,<br>         |
| CERATOPOGONIDAE<br>CHIDOMOMIDAE         | - ;  | - y   | ٠ <u>:</u>  | 4 1 2         |
| ALL DIPTERA                             | 5    | 3     | 2           | 899           |
| EPHEMEROPTERA                           |      |       |             |               |
|   | •    | •     | •           |               |
| פאאכחילהאלט                             | >    | -     | >           |               |
| EPHEMERIDAE                             |      |       |             |               |
| HEXAGENIA                               | 6    | -     | 9           |               |
| ALL EPHEMEROPTERA                       |      |       |             | 179           |
| TRICHOPTERA                             |      |       |             |               |
| HYDROPSYCHIDAE                          |      |       |             |               |
| CHEUMATOPSYCHE                          | 0    | ~     | 0           |               |
| HYDROPSYCHE                             | 0    | -     | -           |               |
| 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 |      |       |             |               |
| LEPTOCERIDAE                            |      |       |             |               |
| OECETIS                                 | 7    | r.    | -           |               |
| ALL TRICHOPTERA                         |      |       |             | 117           |
| ACARINA                                 | 0    | 0     | 0           | 21            |
| GASTROPODA                              |      |       |             |               |
| AMNICOLA                                | so.  | 0     | 1           |               |
| DI BUDDCEPA ACUTA                       | e    | c     | -           |               |
|   | ,    | •     | •           |               |
|   |      |       |             |               |

(

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |     |              |         | 10/ 9/84      |
|---------------------------------------|-----|--------------|---------|---------------|
| TRANSECT 16 STATION 3 (CONT'D)        | • Q | STAINTS BAGS | STA STA | FOTTMATED     |
| TAXON                                 | -   | 1 2 3        | 9       | NO./SQ. METER |
| PELECYPODA                            |     |              |         |               |
| SPHAERIIDAE                           |     |              |         |               |
| PISIDIUM                              | 23  | <b>6</b>     | 52      |               |
| f 5 0 2 3 B 2 5                       |     |              |         |               |
| SPHAERIUM                             | 0   | 7            | -       |               |
|                                       |     |              |         |               |
| ALL SPHAERIIDAE                       |     |              |         | 475           |
| UNIONIDAE                             |     |              |         |               |
| LAMPSILIS                             | 0   | -            | 0       |               |
| ***                                   |     |              |         |               |
| OTHER                                 | -   | -            | 0       |               |
| ALL PELECYPODA                        |     |              |         | 496           |

| MACROZODBENTHOS PONAR GRAB COUNT DATA     |              |             |          | 10/ 9/84                   |
|---|--------------|-------------|----------|----------------------------|
| DETROIT RIVER TRANSECT 17 STATION 1 TAXON | GRAB<br>1    | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| CNIDARIA                                  | 0            | -           | •        | 7                          |
| ALL CNIDARIA                              |              |             |          | 7                          |
| RHABDOCOELA                               | <b>L</b> O   | 9           | 0        | 145                        |
| TRICLADIDA                                | ~            | -           | 8        | 34                         |
| NEMERTINEA                                | 4            | 9           | 0        | 96                         |
| NEMATODA                                  | 165          | 143         | 508      | 3560                       |
| HIRUDINEA<br>ERPOBDELLIDAE                | 0            | -           | 0        |                            |
| GLOSSIPHONIIDAE<br>HELOBDELLA ELONGATA    | 0            | -           | 0        |                            |
| HELOBDELLA STAGNALIS                      | 0            | 8           | ~        |                            |
| ALL HIRUDINEA                             |              |             |          | 7                          |
| OL I GOCHAETA<br>Spirosperma              | <del>0</del> | 5           | ч        |                            |
| STYLARIA                                  | •            | Ξ           | ₩        |                            |
| OTHER<br>ALL OLIGOCHAETA                  | 500          | 257         | 228      | . 801                      |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |            |             |          | 10/ 9/84                   |
|---------------------------------------|------------|-------------|----------|----------------------------|
| TRANSECT 17 STATION 1 (CONT'D)        | . !        |             |          |                            |
| TAXON                                 | <b>5</b> – | GRAB COUNTS | STS<br>B | ESTIMATED<br>NO./SQ. METER |
| A<br>KIA SPE                          | 5          | 2           | 36       |                            |
| ALL POLYCHAETA                        | •          | !           | 2        |                            |
| CLADOCERA                             |            |             |          | 3                          |
| BOSMINA                               | m          | 0           | 0        |                            |
| SIDA CRYSTALLINA                      | 4          | -           | <u>0</u> |                            |
| ALL CLADOCERA                         |            |             | ?        | 186                        |
| COPEPODA                              |            |             |          | 1                          |
| HARPACTICOIDA                         | 36         | 215         | 0        |                            |
| MACROCYCLOPS                          | •          | 0           | 0        |                            |
| ALL COPEPODA                          |            |             |          | 1735                       |
| OSTRACODA                             | 0          | 0           | -        |                            |
| AMPH1 PODA                            |            |             |          |                            |
| GAMMARUS                              | •          | 10          | 1        |                            |
| HYALELLA AZTECA                       | C          | c           | -        |                            |
| ALL AMPHIPODA                         | )          | •           |          |                            |
| 1509051                               |            |             |          | <u>:</u>                   |
| ASELLUS                               | 5          | _           | N)       | 186                        |
| ALL ISOPODA                           |            |             | •        |                            |
| DIPTERA                               | •          |             |          |                            |
| CHIRONOMIDAE                          | 74         | 74 116      | 67       | 1770                       |

| TRANSECT 17 STATION 1 (CONT.D)   | Č                     | į           | 9    |                         |
|----------------------------------|-----------------------|-------------|------|-------------------------|
| TAXON                            | 9<br>2<br>2<br>7      | GKAB COUNTS | S 60 | ESTINATED NO./SQ. METER |
| EPHEMEROPTERA<br>CASMIDAE        | ;<br>{<br>;<br>;<br>} |             |      | \$                      |
| CAENIS                           | 0                     | -           | 0    |                         |
|                                  |                       |             |      |                         |
| HEXAGENIA                        | 1                     | ō           | 6    |                         |
| ALL EPHEMEROPTERA                |                       |             | •    | 255                     |
| TRICHOPTERA                      |                       |             |      |                         |
| HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | -                     | -           | c    |                         |
|                                  |                       |             | •    |                         |
| HYDROPSYCHE                      | -                     | 0           | -    |                         |
| - FB10CB010AE                    |                       |             |      |                         |
| DECETIS                          | -                     | 0           | 0    |                         |
| 1 1 1 1 1                        |                       |             |      |                         |
| POLYCENTROPODIDAE                |                       |             |      |                         |
| PHYLOCENTROPUS                   | 4                     | 0           | m    |                         |
| ALL TRICHOPTERA                  |                       |             |      | e.                      |
| ACARINA                          | 8                     | *           | 0    | <b>∓</b>                |
| GASTROPODA                       |                       |             |      |                         |
| AMNICOLA                         | 2                     | 27          | 23   |                         |
| ELIMIA LIVESCENS                 | 0                     | m           | ~    |                         |
|                                  |                       |             | ı    |                         |
| FERISSIA                         | 0                     | <b>6</b>    | 0    |                         |
| SISTEMAN                         | C.                    | -           | 6    |                         |
|                                  | ,                     |             | ,    |                         |
| PHYSA                            | 4                     | ស           | -    |                         |
|                                  |                       | ,           | ,    |                         |
| PLEUROCERA ACUTA                 | 0                     | <b>C</b>    | 0    |                         |
| ALL GASTROPODA                   |                       |             |      | 620                     |
|                                  |                       |             |      |                         |

10/ 9/84

MACROZOGBENTHOS PONAR GRAB COUNT DATA

\*

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |             |     | 10/ 9/84                 |
|---------------------------------------|----------|-------------|-----|--------------------------|
| TRANSECT 17 STATION 1 (CONT'D)        |          |             |     |                          |
| TAXON                                 | GRA<br>- | GRAB COUNTS | MTS | ESTIMATED AND VED METERS |
| PELECYPODA                            | .        | •           | ,   | MONTH TO THE PERSON      |
| SPHAERIIDAE                           |          |             |     |                          |
| PISIDION                              | 75       | ž.          | 27  | 1054                     |
|                                       |          |             |     | •                        |
| CAIGNIGAE<br>At 1 BE 600000           | 0        | -           | 0   |                          |
| ALE VELECIPOR                         |          |             |     | 1061                     |

, s. 4 . - 5

| FTRANSECT 17 STATION 2  GRAB COUNTS ESTIMAT  11 5 19 241  241  0 2 5 48  15 3 29 324  41 12 20 503  4 8 21  0 1 0  10 19 7 482  SPECIOSA  397 477 234 7630  TA  DA  1 0 0 7  TA  DA  1 0 0 7  TA  TA  THE STIMAT  A 1 1 2 20 503  A 1 1 2 20 503  A 1 1 2 482  THE STIMAT  A 1 1 2 20 503  A 1 1 0 0 0 7  THE STIMAT  A 1 1 2 3 4 4 8 241  A 1 1 2 2 5 5 4 8 241  A 1 1 2 2 5 5 4 8 241  A 1 0 0 0 7  THE STIMAT  A 1 1 2 3 4 4 8 241  A 1 1 2 3 4 7 7 8 3 7 7 8 3 7 7 8 3 7 8 | MACROZOGBENTHOS PONAR GRAB COUNT DATA      |             |              |      | 48/8 /01      |
|--|--|-------------|--------------|------|---------------|
| A 11 5 19 241  IDARIA  NEA  NEA  NEA  NEA  NEA  NEA  NEA  N  | DETROIT RIVER TRANSECT 17 STATION 2        | <b>V</b> ac | 5            | NT V | FSTIMATED     |
| 1A   |  | -           | <b>7</b>     | , m  | NO./SQ. METER |
| 1A 0 2 5 5 15 3 29 41 12 20 41 12 20 41 12 20 10 19 7 44ETA 397 477 234 477 234 AETA 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2   | 6<br>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | =           | i io         | 6    | 241           |
| HAETA  A SPECIOSA  | ALL CNIDARIA                               |             |              |      | 241           |
| 15 3 29 41 12 20 41 12 20 41 12 20 42 14 12 20 44 8 21 48 21 68 21 | TRICLADIDA                                 | 0           | 8            | £    | 48            |
| MA 4 8 21  HAETA A SPECIOSA A SPECIOSA A COLORA  | NEMERT I NEA                               | 2           | ო            | 58   | 324           |
| HAETA  A SPECIOSA  | NEMATODA                                   | <b>‡</b>    | 2            | 20   | 503           |
| CHAETA  CHAETA  10 19 7  14 SPECIOSA  HAETA  COIDA  1 0 0  CERA  | OL IGOCHAETA<br>Spirosperma                | 4           |              | 2    |               |
| THAETA  IA SPECIOSA  19 7  14 594  2 1 2  30 1 2  41 0 0  COLDA  10 0 0  | STYLARIA                                   | 0           | -            | 0    |               |
| 1A SPECIOSA 397 477 234 HAETA 2 1 2 1 2 1 2 2 1 2 0 0 CERA 1 0 0   | OTHER<br>ALL OLIGOCHAETA                   | 5           | <del>0</del> | 1    | 482           |
| CHAETA  CHAETA  2 1 2  1 0 0  1 0 0  1 0 0  1 0 0  | POLYCHAETA<br>Manayunkia speciosa          | 397         | 477          | 234  | 7630          |
| 00ERA 1 0 1 0 1 0 1 0 1 0 0 1 0 0 0 0 0 0 0  | ALL POLYCHAETA                             |             |              |      | 7630          |
| DOCERA  TICOIDA  1 0   | CLADOCERA<br>BOSMINA                       | 8           | -            | 8    |               |
| DOCERA TICOIDA 1 0   | DAPHAIA                                    | -           | 0            | 0    |               |
| TICOIDA 1 0  | ALL CLADGERA                               |             |              |      | <b>=</b>      |
| Ali Ambebana   | COPEPODA<br>HARPACTICOIDA                  | -           | 0            | 0    |               |
| ALL COPERCION  | ALL COPEPODA                               |             |              |      | •             |

.

| TRANSECT 17 STATION 2 (CONT.D)                  | g          | 7   | GRAR COMMTS | SET SEE SEE   |
|---|------------|-----|-------------|---------------|
| TAXON   | <b>i</b> — | , w |             | NO./SQ. METER |
| OSTRACODA                                       | 0          | -   | 0           |               |
| TERRESTRIAL INSECT                              | -          | 0   | 0           | 1             |
| DIPTERA<br>CHIRONOMIDAE                         | 5          | -   | 9           | 117           |
| EPHEMEROPTERA<br>Baetiscidae<br>Baetisca        | ā          | 0   | 11          |               |
| ALL EPHEMEROPTERA                               |            |     |             | 262           |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | 374        | 158 | ‡           |               |
| HYDROPSYCHE                                     | <b>56</b>  | ō   | 0           |               |
| LEPTOCERIDAE<br>CERACLEA                        | •          | 0   | -           |               |
| ALL TRICHOPTERA                                 |            |     |             | 7038          |
| ACARINA   | a          | 0   | -           | 12            |
| GASTROPODA<br>AMNICOLA                          | <b>58</b>  | 21  | . 9         |               |
| !   | 32         | ~   | 8           |               |
| PHYSA   | 0          | -   | 0           |               |
| _   | -          | 0   | 8           |               |
| VALVATA SINCERA                                 | 0          | -   | 0           |               |
| ALL GASTROPODA                                  |            |     |             | 188           |

Ø

| MACROZOGBENTHOS PONAR GRAB COUNT DATA |         |             |     | 10/ 8/84      |
|---------------------------------------|---------|-------------|-----|---------------|
| TRANSECT 17 STATION 2 (CONT'D)        | GRAB    | GRAB COUNTS | 4TS | ESTIMATED     |
| TAXON                                 | -       | 2 3         | 6   | NO./SO. WEIEK |
| PELECYPODA                            |         |             |     |               |
| SPHAERIIDAE                           | у.<br>В | σ           | 25  |               |
| PISIDIUM                              | 3       | )           | )   |               |
|                                       | ,       | •           | 4   |               |
| SPHAERIUM                             | •       |             |     |               |
|                                       |         |             |     | 486           |
| ALL SPHAERIIDAE                       |         |             |     |               |
| UNIONIDAE                             | c       | 0           | -   |               |
| LAMPSILIS                             | >       | )           |     |               |
| 6 5 1 7 6 1 1 4 7                     | ·       | o           | -   |               |
| OTHER                                 | •       | •           |     | 523           |
| ACCOVER SELECTION                     |         |             |     |               |

| DETROIT RIVER TRANSECT 17 STATION 3 | Š        | Š     |       |               |
|-------------------------------------|----------|-------|-------|---------------|
| 1                                   | Š -      | 1 2 3 | ) (F) | NO./SQ. METER |
| A LACUSTRIS                         | ٥        | -     | ٥     |               |
| HYDRA                               | 0        | =     | 0     |               |
| ALL CNIDARIA                        |          |       |       | 68            |
| RHABDOCOELA                         | 0        | 0     | -     | 7             |
| TRICLADIDA                          | 0        | 9     | 0     | 69            |
| NEMERTINEA                          | 38       | 7     | ÷     | 383           |
| NEMATODA                            | <b>‡</b> | 7     | 21    | 709           |
| OLIGOCHAETA<br>Nais                 | 0        | -     | 0     |               |
| SPIROSPERMA                         | 16       | 23    | 37    |               |
| OTHER<br>ALL OLIGOCHAETA            | 2        | 27    | 93    | 1866          |
| POLYCHAETA<br>Manayunkia speciosa   | 1027     | 239   | 220   | :0234         |
| ALL POLYCHAETA                      |          |       |       | 10234         |
| CLADOCERA<br>BOSMINA                | 0        | -     | 0     |               |
| DAPHALA                             | 0        | -     | 0     |               |
|                                     |          |       |       | •             |

| MACROZOGBENTHOS PONAR GRAB COUNT DATA           |          |             |          | 10/ 9/84                |
|---|----------|-------------|----------|-------------------------|
| TRANSECT 17 STATION 3 (CONT'D)                  |          |             |          |                         |
| TAXON   | GRA<br>- | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER |
| COPEPODA<br>HARPACTICOIDA                       | 0        | 0           | 4        | 28                      |
| ALL COPEPODA                                    |          |             |          | 28                      |
| TERRESTRIAL INSECT                              | 0        | 0           | 4        | 58                      |
| DIPTERA<br>CHIRONOMIDAE                         | 6        | ø           | 25       | 234                     |
| EPHEMEROPTERA<br>CAENIDAE<br>BRACHYCERCUS       | 0        | 0           | -        |                         |
| EPHEMERIDAE<br>HEXAGENIA                        | 0        | -           | 0        |                         |
| BAETISCIDAE<br>BAETISCA                         | Ξ        | ო           | 8        |                         |
| HEPTAGENI IDAE<br>Stemonema                     | 0        | 8           | ٥        |                         |
| ALL EPHEMEROPTERA                               |          |             |          | 138                     |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>CHEUMATOPSYCHE | 90       | 4           | -        |                         |
| HYDROPSYCHE                                     | 4        | -           | 0        |                         |
| LEPTOCERIDAE<br>CERACLEA                        | 0        | -           | 0        |                         |
| OECETIS   | 0        | -           | -        |                         |
| POLYCENTROPODIDAE PHYLOCENTROPUS                | 0        | 0           | -        |                         |
| ALL TRICHOPTERA                                 |          |             |          | -372                    |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |              |           | 10/ 9/84                |
|---------------------------------------|------|--------------|-----------|-------------------------|
| TRANSECT 17 STATION 3 (CONT'D)        |      |              |           |                         |
|                                       | GR - | GRAB COUNTS  | JNTS<br>3 | ESTIMATED NO./SO. METER |
| GASTROPODA                            |      |              |           |                         |
| AMNICOLA                              | 11   | 21           | 99        |                         |
| ELIMIA LIVESCENS                      | 0    | -            | ď         |                         |
| ALL GASTROPODA                        | ,    | •            | •         | 4.7.                    |
| PELECYPODA                            |      |              |           | 3                       |
| SPHAERIIDAE                           |      |              |           |                         |
| PISIDIUM                              | 4    | 9            | 25        |                         |
| SPHAERIUM                             | ď    | <del>-</del> | 8         |                         |
| ALL SPHAERITOAF                       |      |              |           | į                       |
| UNIONIDAE                             | 0    | 0            | 8         | 461                     |
| ALL PELECYPODA                        |      |              |           | 475                     |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                    |            |                |           | 10/11/84                   |
|--|------------|----------------|-----------|----------------------------|
| DETROIT RIVER TRANSECT 18 STATION 1 TAXON                | æ <b>-</b> | GRAB COUNTS    | UNTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA  | 24         | 9              | 40        | 400                        |
| TRICLADIDA   | 80         | 86             | 198       | 2541                       |
| NEMERTINEA   | 99         | 78             | <b>5</b>  | 1729                       |
| NEMATODA   | 20         | 120            | 35        | 1205                       |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>GLOSSIPHONIA HETEROCLITA | •          | -              | -         | <b>4</b>                   |
| OL I GOCHAETA<br>NA I S                                  | 66         | 8              | 115       |                            |
| SPIROSPERMA  | 268        | 437            | 317       |                            |
| STYLARIA   | 182        | 24             | 601       |                            |
| OTHER<br>ALL OLIGOCHAETA                                 | 1566       | 1566 3229 1371 | 1371      | 57152                      |
| CLADOCERA<br>CAMPTOCERCUS                                | 0          | 0              | 11        |                            |
| t i  | 0          | <b>60</b>      | 0         |                            |
| ALL CLADOCERA  |            |                |           | 172                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA      |           |             |          | 10/11/84  |
|--|-----------|-------------|----------|---|
| TRANSECT 18 STATION 1 (CONT.O) TAXON       | GRAB      | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>ND./SQ. METER                                    |
| COPEPODA<br>CYCLOPS BICUSPIDATUS           | 0         |             | 0        | 1<br>1<br>5<br>6<br>8<br>8<br>8<br>8<br>9<br>9<br>9<br>9<br>9 |
| HARPACTICOIDA                              | 9         | 0           | 0        |   |
| ALL COPEPODA                               |           |             |          | 165   |
| DECAPODA<br>ASTACIDAE                      | 0         | 8           | 0        | 7   |
| ALL DECAPODA                               |           |             |          | 7   |
| AMPHI PODA<br>GAMMARUS                     | 6         | 0           | 80       |   |
| HYALELLA AZTECA                            | 0         | 8           | -        |   |
| ALL AMPHIPODA                              |           |             |          | 303   |
| ISOPODA<br>ASELLUS                         | •         | -           | 0        | •   |
| ALL ISOPODA                                |           |             |          | ۲   |
| DIPTERA<br>CHIRONDMIDAE                    | <b>58</b> | 42          | 7        | 572   |
| TRICHOPTERA<br>HYDROPTILIDAE<br>HYDROPTILA | -         | -           | ø        |   |
| POLYCENTROPODIDAE<br>POLYCENTROPUS         | 4         | -           | ø        | ٠   |
| ALL TRICHOPTERA                            |           |             |          | 131   |
| ODONATA<br>COENAGRIONIDAE                  | -         | 0           | 4        | <b>8</b>  |

| MACKUZUUBENIMUS PUNAK UKAB CUUNI DAIA   |                  |             |                  | 10/11/84                                       |
|---|------------------|-------------|------------------|--|
| TRANSECT 18 STATION 1 (CONT'D)          |                  |             | !                |  |
| TAXON                                   | - 6              | GRAB COUNTS | 2<br>2<br>3<br>3 | NO./SQ. METER                                  |
| GASTROPODA                              | 1<br>}<br>!<br>! | !<br>!<br>! | !<br>!<br>!      | )<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| AMNICOLA                                | -                | 6           | ĸ                |  |
| 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |                  |             |                  |  |
| FERISSIA                                | 97               | 202         | 484              |  |
| ****                                    |                  |             |                  |  |
| GYRAULUS                                | 4                | 6           | 31               |  |
|   |                  |             |                  |  |
| PHYSA                                   | ស                | 7           | 64               |  |
| 111111                                  |                  |             |                  |  |
| VALVATA TRICARINATA                     | 0                | -           | 0                |  |
|   |                  |             |                  |  |
| ALL GASTROPODA                          |                  |             |                  | 6694   |
| PELECYPODA                              |                  |             |                  |  |
| SPHAERIIDAE                             |                  |             |                  |  |
| PISIDIUM                                | so.              | <b>58</b>   | 8                | 365  |
|   |                  |             |                  |  |
| ALL PELECYPODA                          |                  |             |                  | 365  |

| DETROIT RIVER   | TRANSECT 18 STATION 2 |            |           |             |                            |
|---|-----------------------|------------|-----------|-------------|----------------------------|
| TAXON   |                       | <b>3</b> – | <b>₽8</b> | GRAB COUNTS | ESTIMATED<br>NO./SQ. METER |
| RHABOOCOELA   |                       | 23         | 8         | •           | 592                        |
| TRICLADIDA  |                       | 12         | 0         | 0           | 6                          |
| NEMERT I NEA  |                       | -          | 9         | 9           | 227                        |
| NEMATODA  |                       | 32         | 8         | <b>5</b>    | 344                        |
| OL I GOCHAETA<br>NA I S                                   |                       | 2          | 128       | 8           |                            |
| SPIROSPERMA   |                       | •          | 2         | 20          |                            |
| OTHER<br>ALL OLIGOCHAETA                                  |                       | 1718 6206  | 6206      | 2963        | 77957                      |
| CLADOCERA<br>ILYOCRYPTUS                                  |                       | -          | 0         | 0           |                            |
| AMPHIPODA<br>GAMMARUS<br>ALL AMPHIPODA                    |                       | -          | •         | -           | <b>:</b> :                 |
| DIPTERA<br>CERATOPOGONIDAE<br>CHIRONOMIDAE<br>ALL DIPTERA |                       | - 4        | 0-        | . 07        | 406<br>413                 |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |      |             |          | 10/11/84                |
|---------------------------------------|------|-------------|----------|-------------------------|
| 18 STAT                               | GRAI | GRAB COUNTS | NTS<br>3 | ESTIMATED NO./SQ. METER |
| ODONATA<br>GOMPHIDAE<br>GOMPHUS       | -    | ۰           | 0        | 7                       |
| ALL ODONATA                           |      |             |          |                         |
| GASTROPODA<br>FERISSIA                | -    | -           | 0        |                         |
| GYRAULUS                              | -    | 9           | 0        |                         |
| PHYSA                                 | -    | 0           | 0        |                         |
| ALL GASTROPODA                        |      |             |          | 138                     |
| PELECYPOOA<br>Sphaeriidae<br>Pisidium | -    | -           | 0        | <b>2</b>                |
| ALL PELECYPODA                        |      |             |          | <b>‡</b>                |

1

C

. . . . . . . .

| MACROZOGBENTHOS PONAR GRAB COUNT DATA     |      |                |            | 10/11/84                   |
|---|------|----------------|------------|----------------------------|
| DETROIT RIVER TRANSECT 18 STATION 3 TAXON |      | GRAB COUNTS    | KUNTS<br>3 | ESTIMATED<br>NO./SQ. METEI |
| RHABDOCOELA                               | 8    | 30 56          | 38         | 954                        |
| TRICLADIDA                                | 0    | 6              | •          | 2                          |
| NEMERTINEA                                | 48   | <b>.</b>       | 178        | 1680                       |
| NEMATODA                                  | 0    | 0              | <b>5</b>   | 110                        |
| OL I GOCHAETA<br>Na 1 S                   | 0    | 0              | 9          |                            |
| SPIROSPERMA                               | 112  | 96             | \$         |                            |
| OTHER<br>ALL OLIGOCHAETA                  | 2129 | 2129 2517 3547 | 3547       | 57862                      |
| CLADOCERA<br>SIDA CRYSTALLINA             | 0    | 0              | 16         | ÷                          |
| ALL CLADOCERA                             |      |                |            | 110                        |
| OSTRACODA                                 | 0    | -              | 0          | 1                          |
| DIPTERA<br>CHIROMOMIDAE                   | 0    | c              | 4          | 28                         |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA         |          |             |     | 10/11/84      |
|---|----------|-------------|-----|---------------|
| DETROIT RIVER TRANSECT 19 STATION 1           |          |             |     |               |
|   | ğ        | GRAB COUNTS | SIL | ESTIMATED     |
| TAXON   | -        | 7           | e   | NO./SQ. METER |
| RHABDOCOELA                                   | 34 3     | 37          | 38  | 730           |
| TRICLADIDA                                    | 25       | 8           | 5   | 269           |
| NEMERTINEA                                    | 10       | 43          | 102 | 1756          |
| NEMATODA                                      | 83       | 129         | 123 | 2300          |
| OL I GOCHAETA<br>NA I S                       | <b>S</b> | 4           | •   |               |
| SPIROSPERMA                                   | 80       | 47          | 11  |               |
| STYLARIA                                      | Ç        | 38          | 8   |               |
| OTHER<br>ALL OLIGOCHAETA                      | 168      | 8           | 123 | 4559          |
| POLYCHAETA MANAYUMKIA SPECIOSA ALL POLYCHAETA | 202      | 334         | 405 | 6460<br>6460  |

| TRANSECT 19 STATION 1 (CONT'D)         | 9 | 2        | ž   |               |
|--|---|----------|-----|---------------|
|  | - | 1 2 3    | . m | NO./SO. METER |
| CLADOCERA                              | , |          |     |               |
| BOSHINA                                | 0 | •        | N   |               |
| CAMPTOCERCUS                           | 0 | 0        | -   |               |
| STEP TEMP TEMP TEMP TEMP               | c | -        | c   |               |
| 10111111111111111111111111111111111111 | 0 | •        | >   |               |
| HOLOPEDIUM                             | • | ď        | ٥   |               |
| SIDA CRYSTALLINA                       | - | -        | -   |               |
| 7                                      |   |          |     | ,             |
| ALL CLADOCERA                          |   |          |     | 8             |
| COPEPODA                               | ć | •        | •   |               |
|  | > | ٧.       | >   |               |
| HARPACTICOIDA                          | Ð | •        | =   |               |
| ALL COPEPODA                           |   |          |     | 165           |
| AMPHI PODA                             |   |          |     |               |
| GAMMARUS                               | - | -        | 4   | 7             |
| ALL AMPHIPODA                          |   |          |     | <b>‡</b>      |
| TERRESTRIAL INSECT                     | 0 | ~        | 0   | 2             |
| DIPTERA                                | c | #7       | c   |               |
| CHIRONOMIDAE                           | ō | 0        | • • | 110           |
| EMPIDIOAE                              | 0 | <b>-</b> | 0   | 153           |

**(**.

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |                  |             |        | 10/11/84                                |
|---|------------------|-------------|--------|---|
| TRANSECT 19 STATION 1 (CONT'D)  | 0400             | STIMPO BAGS | o Line | COTAMITOR                               |
|   | -                | 3 ~         |        | NO./SQ. METER                           |
| TRICHOPTERA   | !<br>!<br>!<br>! |             | <br>   | † † † 1   1   1   1   1   1   1   1   1 |
| HYDROPTILIDAE<br>HYDROPTILA   | ın               | 0           | -      |   |
|   | •                | •           | •      |   |
| A LOCK TO THE PROPERTY OF THE | >                | -           | >      |   |
| POLYCENTROPODIDAE   |                  |             |        |   |
| POLYCENTROPUS   | 0                | 0           | -      |   |
| ALL TRICHOPTERA   |                  |             |        | 76                                      |
| ACARINA   | 6                | -           | 17     | 255                                     |
| GASTROPODA  |                  |             |        |   |
| AMNICOLA  | 29               | <b>6</b>    | £      |   |
| ELIMIA LIVESCENS  | 7                | a           | *      |   |
|   | -                | 0           | 0      |   |
| 1   |                  |             |        |   |
| GYRAULUS  | 0                | 4           | •      |   |
| 1   | •                | •           | •      |   |
| 40.HL   | ٧.               | >           | 0      |   |
| ALL GASTROPODA  |                  |             |        | 530                                     |
| PELECYPODA  |                  |             |        | ,                                       |
| SPHAERIIDAE   |                  |             |        | •                                       |
| PISIDIUM  | 47               | 3           | 41     | 1088                                    |
| ALL PELECYPODA  |                  |             |        | 1068                                    |

13-645

| MACROZGOBENTHOS PONAR GRAB COUNT DATA |            |       |          | 10/11/84      |
|---------------------------------------|------------|-------|----------|---------------|
| DETROIT RIVER TRANSECT 19 STATION 2   |            | 9     |          |               |
| TAXON                                 | š '        | 4 2 3 | 20       | NO./SQ. METER |
| RHABDOCOELA                           | 0          | 0     | -        | -             |
| NEMERTINEA                            | <b>6</b> 0 | 233   | 145      | 3347          |
| NEMATODA                              | 22         | 78    | <b>5</b> | 1412          |
| OLIGOCHAETA                           | •          |       | ,        |               |
| MAIS                                  | 0          | 0     | -        |               |
| SPIROSPERMA                           | 27         | 16    | 59       |               |
| STYLARIA                              | 0          | 0     | +        |               |
| OTHER ALL OLIGOCHAETA                 | <b>6</b> 0 | 9     | 38       | 1274          |
| POLYCHAETA<br>Manayumkia Speciosa     | 4          | -     | v        | 16            |
| ALL POLYCHAETA                        |            |       |          | 76            |
| CLADOCERA<br>BOSMINA                  | 0          | 6     | 0        | 2             |
| ALL CLADOCERA                         |            |       |          | 2             |
| COPEPODA                              | 0          | 0     | ,        |               |
| HARPACTICOIDA                         | -          | 0     | 0        | :             |
| ALL COPEPODA                          |            |       |          | Z             |
| DIPTERA<br>Chironomidae               | 0          | 0     | -        |               |
|                                       |            |       |          |               |

| MACROZGOBENTHOS PONAR GRAB COUNT DATA   | GRAB COUNT                      | DATA |             |             |          | 10/11/84                |
|---|---------------------------------|------|-------------|-------------|----------|-------------------------|
| TRANSECT 19 STATION 2 (CONT'D)          | (CONT'D)                        |      |             |             |          |                         |
| TAXON                                   |                                 |      | GRAB COUNTS | 2<br>2<br>2 | NTS<br>3 | ESTIMATED NO./SQ. METER |
| ACARINA 0 0 1 7                         | :<br>!<br>!<br>!<br>!<br>!<br>! | <br> | 0           | 0           | -        |                         |
| GASTROPODA                              |                                 |      |             |             |          |                         |
| AMNICOLA                                |                                 |      | •           | -           | ·        |                         |
| * |                                 |      | •           |             | •        |                         |
| ELIMIA LIVESCENS                        |                                 |      | e           | 4           | c        |                         |
|   |                                 |      | ,           | •           | •        |                         |
| FERISSIA                                |                                 |      | c           | -           | c        |                         |
| 1111111                                 |                                 |      | •           | •           | >        |                         |
| ALL GASTROPODA                          |                                 |      |             |             |          |                         |
| 1                                       |                                 |      |             |             |          | 3                       |

1

(

B 647

| DETROIT RIVER                             | TRANSECT 19 STATION 3                   |     |             |           |                            |
|---|---|-----|-------------|-----------|----------------------------|
| TAXON                                     |   | ğ - | GRAB COUNTS | STAS<br>3 | ESTIMATED<br>NO./SQ. METER |
| NEMERTINEA                                | , | 8   | 8           | 132       | 1921                       |
| NEMATODA                                  |   | 4   | •           | 6         | 76                         |
| BRYOZOA                                   |   | 0   | +           | 0         | •                          |
| OL I GOCHAETA<br>NA I S                   |   | 0   | 0           | -         |                            |
| SP I ROSPERMA                             |   | 72  | 11          | ō         |                            |
| STYLARIA                                  |   | -   | 0           | 0         |                            |
| OTHER<br>ALL OLIGOCHAETA                  |   | 5   | 6           | a         | 475                        |
|   | . <b>VSO</b>                            | 7   | 6           | -         | 165                        |
| ALL POLYCHAETA                            | 1<br>1<br>1                             |     |             |           | 165                        |
| CLADOCERA<br>BOSMINA                      |   | 0   | -           | -         |                            |
| EURYCERCUS LAMELLATUS                     | LLATUS                                  | 0   | -           | •         |                            |
| ALL CLADOCERA                             |   |     |             |           | 2                          |
| COPEPODA<br>HARPACTICOIDA<br>ALL COPEPODA |   | 0   | -           | 0         | r r                        |
| TERRESTRIAL INSECT                        | <b>F</b>                                | 0   | -           | 0         | . 1                        |
|   |   |     |             |           |                            |

| MACROZODBENIHDS PONAK GRAB COUNT DATA                         |     |             |          | 10/11/84      |
|---|-----|-------------|----------|---------------|
| TRANSECT 19 STATION 3 (CONT.D)                                | Š   | į           | <u> </u> |               |
| TAXON   | - E | GKAB CUUNIS | 2 60     | NO./SQ. METER |
| DMIDAE  |     | 0           | 0        | 7             |
| EPHEMEROPTERA<br>BAETISCIDAE<br>BAETISCA<br>ALL EPHEMEROPTERA | "   | •           | •        | 7             |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche               | -   | 0           | 0        |               |
| HYDROP SYCHE  | 6   | 0           | -        |               |
| POLYCENTROPODIDAE NEURECLIPSIS ALL TRICHOPTERA                | 0   | <b>o</b> .  | •        | ‡             |
| ACARINA   | 0   | 7           | 4        | 7             |
| GASTROPODA<br>AMNICOLA  | -   | ~           | 0        |               |
| ELIMIA LIVESCENS  | 8   | -           | 9        |               |
|   | 0   | 7           | 0        | ٠             |
| ALL GASTROPODA  |     |             |          | 96            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                                   |      |             |          | 10/11/84                   |
|---|------|-------------|----------|----------------------------|
| DETROIT RIVER TRANSECT 20 STATION 1                                     | - 68 | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| PARTICIPAL AND                      | 33   | 126         | 53       | 1488                       |
|   | 16   | 43          | 6        | 537                        |
| NOTE OF TAKE  | IO.  | Ø           | 6        | 117                        |
| WEMAT OD A  | 35   | 167         | 88       | 1632                       |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>HELOBDELLA TRISERIALIS<br>ALL HIRUDINEA | 0    | •           | -        |                            |
| OLIGOCHAETA<br>Nais   | 108  | 192         | 60       |                            |
| SPIROSPERMA   | 9    | 83          | 110      |                            |
| STYLARIA  | 414  | 111         | 487      |                            |
| OTHER<br>ALL DLIGOCHAETA  | 9    | 383         | 196      | 16686                      |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA                                       | 85   | 80          | 38       | 992                        |
| ALL POLYCHAETA  |      |             |          | 992                        |

| 20 STATION 1 (CONT'D)  GRAB COUNTS  ERCUS  ERCUS  CUS LAMELLATUS  O   |   |          |  |     |                            |
|---|---|----------|--|-----|----------------------------|
| A CERCUS  A CERCUS  CE  | TRANSECT 20 STATION 1 (CONT'D)          | į        |  | ;   |                            |
| CUS LAMELLATUS  | TAXON                                   | GRA<br>- | 200<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200 | S E | ESTIMATED<br>NO./SQ. METER |
| CERCUS  CONTINE  CONT  | CLADOCERA                               |          |  |     |                            |
| CERCUS  RCUS LAMELLATUS  RCUS LAMELLATUS  DIUM  RYSTALLINA  2 0 5  DIUM  RYSTALLINA  2 0 1 0  1 2  DOCERA  DOCERA  DOCERA  TICOIDA  TICOID  | BOSMINA                                 | 0        | 9  | 0   |                            |
| RCUS LAMELLATUS       0       1       0         DOUM       0       1       0         RYSTALLINA       2       0       1       2         DOCERA       0       1       2       1       0         S VERNALIS       0       4       0       1       0       1       0       1         MUS       0       4       0       1       0       0       0       0   | CAMPTOCERCUS                            | 4        | 0  | -   |                            |
| EDIUM CRYSTALLINA ADOCERA ADOC  | EURYCERCUS LAMELLATUS                   | o        | ~  | 0   |                            |
| PUNM<br>RYSTALLINA  RYSTALLINA  BOCERA  DOCERA  DOCERA  BOCERA  OPS  TICOIDA  TICOIDA |   | ,        | ,  | ı   |                            |
| S VERNALIS  S VERNALIS  S VERNALIS  S VERNALIS  S VERNALIS  O 1 2  O 1 2  O 1 2  O 1 2  O 1 2  O 1 0  I 0 1  | HOLOPEDIUM                              | 0        | -  | 0   |                            |
| S VERNALIS   | SIDA CRYSTALLINA                        | 8        | 0  | ស   |                            |
| S VERNALIS  S VERNALIS  S VERNALIS  MUS  ODS  2 1 0  1 0 1  TOOIDA  TICOIDA  ON 4 0  TICOIDA  ON 4 0  TOOIDA  A  A  A  A  A  A  A  A  A  A  A  A  |   |          |  |     | 158                        |
| S VERNALIS S VERNALIS S VERNALIS S VERNALIS  MUS  OPS  2 1 0  2 1 0  1 0 1  1 0  |   |          |  |     |                            |
| DA AZTECA 28 15 7 11 W.S. 29 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 0 1  | CYCLOPS VERNALIS                        | 0        | -  | 8   |                            |
| CTICOTOA  CYCLOPS  CY  |   |          |  | )   |                            |
| CTICOTDA  CTICOTDA  CTICOTDA  CYCLOPS    | DIAPTOMUS                               | 0        | 4  | 0   |                            |
| CTICOIDA 1 0 1 CTICOIDA 0 4 0 CTICOIDA 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |   |          |  |     |                            |
| CTICOIDA  CTICOIDA  CTICOIDA  CYCLOPS    | EUCYCLOPS                               | 8        | -  | 0   |                            |
| CTICOIDA CYCLOPS CYCLO  | EURYTEMORA                              | -        | 0  | -   |                            |
| CTICOIDA  CYCLOPS  CY  | 113911111111111111111111111111111111111 |          |  | ,   |                            |
| CYCLOPS  CYCLOPS  DA  DA  RUS  RUS  PEPODA  PHIPODA  US  11 4  OPODA  | HARPACTICOIDA                           | 0        | 4  | 0   |                            |
| CYCLOPS  CYCLOPS  DA  DA  DA  RUS  RUS  RUS  PHIPODA  US  3 11 4  |   | ,        |  | •   |                            |
| PEPODA  DA  RUS  RUS  RUS  PHIPODA  US  3 11 4  | MACROCYCLOPS                            | •        | •  | 0   |                            |
| DA RUS 36 95 37 LLA AZTECA 28 15 7 PHIPODA 3 11 4 0P000A  | ALL COPEPODA                            |          |  |     | 138                        |
| RUS   | AMPHIPODA                               |          |  |     | •                          |
| LLA AZTECA 28 15 7 LLA AZTECA 28 15 7 PHIPODA US 3 11 4   | GANNARUS                                | 36       | 92   | 31  |                            |
| PHIPODA  US  3 11 4  OPDODA   | HYALELLA AZTECA                         | 38       | 5  | 1   |                            |
| US 3 11 4<br><br>OPODA  | ALL AMPHIPODA                           |          |  |     | 1501                       |
| -   | SOPODA                                  | (        | ;  | ,   | į                          |
|   | ASELLUS                                 | 77       | =  | 4   | 124                        |
|   | ALL ISOPODA                             |          |  |     | 124                        |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |            |                |           | 10/11/84                              |
|---------------------------------------|------------|----------------|-----------|---------------------------------------|
| TRANSECT 20 STATION 1 (CONT'D)        | Š          | 9              |           |                                       |
| TAXON                                 | <b>š</b> - | 1 2 3          | 2 60      | ESTIMATED<br>NO./SQ. METER            |
| DIPTERA<br>CERATOPOGONIDAE            | c          | •              | •         | • • • • • • • • • • • • • • • • • • • |
| CHIRONOMIDAE                          | 7          | , <del>2</del> | <u>\$</u> | 2293                                  |
| EMPIDIDAE<br>All Diptera              | •          | -              | 0         | 2307                                  |
| EPHENGROPTERA<br>CARNIDAS             |            |                |           |                                       |
| CAENTS                                | •          | 7              | 23        |                                       |
| EPHEMERIDAE                           |            |                |           |                                       |
| HEXAGENIA                             | 0          | 0              | -         |                                       |
| AMETROP IDAE                          |            |                |           |                                       |
| TRICHDRYTHODES                        | 0          | -              | -         |                                       |
| ALL EPHEMEROPTERA                     |            |                |           | 372                                   |
| TRICHOPTERA<br>HYDRODE VILLIAE        |            |                |           |                                       |
| CHEUMATOPSYCHE                        | ~          | 7              | -         |                                       |
| HYDROPSYCHE                           | -          | -              | 0         |                                       |
|                                       |            |                | )         |                                       |
| HYDROPTILA<br>HYDROPTILA              | -          | -              | c         |                                       |
|                                       | •          |                | •         |                                       |
| ORTHOTRICHIA                          | 0          | 8              | -         |                                       |
| POLYCENTROPODIDAE                     |            |                |           |                                       |
| NEURECLIPSIS                          | 11         | 63             | 12        |                                       |
|                                       | (          | (              | •         | •                                     |
| PULYCENI RCPUS                        | 0          | 0              | -         |                                       |
| ALL TRICHOPTERA                       |            |                |           | 1171                                  |
| ACARINA                               | 32         | 15             | 4         | 943                                   |

| MACRUZUCERNINDS FORTH UNION COUNTY OFFICE  |          |             |     |               |
|--|----------|-------------|-----|---------------|
| TRANSECT 20 STATION ( (CONT/0)   | GRAB     | GRAB COUNTS | NTS | ESTIMATED     |
| TAXON  | -        | ~           | 6   | NO./SQ. METER |
| QASTROPODA<br>APRICOLA   | 46       | <b>4</b>    | 90  |               |
| ELIMIA LIVESCENS   | 0        | 84          | -   |               |
| THE PROPERTY OF THE PROPERTY O | 43       | 5           | 46  |               |
| GYRAULUS   | <b>G</b> | 12          | 22  |               |
| PHYSA  | ø        | 11          | 6   |               |
| ALL GASTROPODA   |          |             |     | 2380          |
| PELECYPODA<br>Sphaeridae<br>Pisidium   | 98       | <b>3</b> 2  | 136 |               |
| SPHAERIUM  | -        | •           | 0   |               |
| ALL SPHAERIDAE ALL PELECYPODA  |          |             |     | 1563<br>1563  |
|  |          |             |     |               |

| DETROIT RIVER TAXON                       | TRANSECT 20 STATION 2 | <b>3</b> - | GRAB COUNTS | STATE | ESTIMATED NO./SO. METER |
|---|-----------------------|------------|-------------|-------|-------------------------|
| NEWERTINEA                                |                       | 8          | 31          | 28    | 675                     |
| NEMATODA                                  |                       | 3          | 2           | 5     | 1611                    |
| OL IGOCHAETA<br>NA IS                     |                       | 0          | -           | -     |                         |
| OTHER<br>ALL: OLIGOCHAETA                 |                       | ø          | •           | •     | 172                     |
| CLADOCERA<br>BOSMINA<br><br>ALL CLADOCERA |                       | •          | •           | -     |                         |
| AMPHIPODA<br>GAMMARUS<br>ALL AMPHIPODA    |                       | •          | •           | 0     |                         |
| DIPTERA<br>CHIRONOMIDAE                   |                       | 0          | 0           | -     | 21                      |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS       |                       | 0          | •           | ₹.    |                         |
| BAETISCIDAE<br>BAETISCA                   |                       | -          | 0           | 0     |                         |
| AMETROPIDAE TRICHORYTHODES                | <b>4</b>              | •          | -           | 0     |                         |
|   |                       |            |             |       |                         |

ģ

| 10/1             |
|------------------|
|                  |
|                  |
|                  |
| DATA             |
|                  |
| GRAB             |
| PONAR GRAB COUNT |
| ROZOGBENTHOS     |

| TAXON                                   | GRAB<br>1 | GRAB COUNTS | NTS<br>B | ESTIMATED NO /SO METER |
|---|-----------|-------------|----------|------------------------|
| TRICHOPTERA                             |           |             |          |                        |
| HYDROPSYCHIDAE                          |           |             |          |                        |
| CHEUMATOPSYCHE                          | •         | ~           | c        |                        |
|   | •         | ,           | >        |                        |
| HYDROPSYCHE                             | •         | ď           | ·        |                        |
| * • • • • • • • • • • • • • • • • • • • | •         | ,           | ٧        |                        |
| POLYCENTROPODIDAE                       |           |             |          |                        |
| NEURECLIPSIS                            | o         | c           | -        |                        |
| 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |           | •           | •        |                        |
| ALL TRICHOPTERA                         |           |             |          | 124                    |
| ACARINA                                 | 0         | 0           | 8        | 4                      |
| GASTBOOCDA                              |           |             |          |                        |
| ELIMIA LIVESCENS                        | 20        | 4           | 1,       |                        |
|   |           | ?           | :        |                        |
| PHYSA                                   | -         | <b>-</b>    | 0        |                        |
| 1 6 9 8 1                               |           |             | 1        |                        |
| ALL GASTROPODA                          |           |             |          | 379                    |
| PELECYPODA                              |           |             |          |                        |
| SPHAERIDAE                              |           | •           |          |                        |
| PISIDIUM                                | -         | C           | c        | 4                      |
| SPHAERIDAE<br>PISIDIUM                  | -         |             | 0        |                        |
|   |           |             |          |                        |

| MACROZODBENTHOS PONAR GRAB COUNT DATA |      |             |     | 10/11/84      |
|---------------------------------------|------|-------------|-----|---------------|
| DETROIT RIVER TRANSECT 20 STATION 3   | GRAB | GRAB COUNTS | NTS | ESTIMATED     |
| TAXON                                 | ŀ    | ~           | 6   | NO./SQ. METER |
| _                                     | 0    | -           | 0   |               |
| ALL CNIDARIA                          |      |             |     | 1             |
| RHABDOCOELA                           | 0    | -           | 0   | 1             |
| TRICLADIDA                            | -    | 8           | -   | 28            |
| NEMERTINEA                            | 6    | 11          | 25  | 1274          |
| NEMATODA                              | 8    | 37          | 42  | 1274          |
| OLIGOCHAETA<br>SPIROSPERMA            | 6    | N           | 0   |               |
| OTHER<br>ALL OLIGOCHAETA              | 7    | ~           | -   | 9             |
| POLYCHAETA<br>MANAYUMKIA SPECIOSA     | m    | 0           | -   | <b>58</b>     |
| ALL POLYCHAETA                        |      |             |     | 78            |
| CLADOCERA<br>BOSMINA                  | -    | •           | 0   |               |
| ILYOCRYPTUS                           | 0    | 0           | -   |               |
| ALL CLADOCERA                         |      |             |     | 7             |

| MACRUSCUSEMINUS PUNAR GRAB CUUNI DAIA           |      |              |     | 10/11/84      |
|---|------|--------------|-----|---------------|
| TRANSECT 20 STATION 3 (CONT'D)                  | 8400 | STAIN COMMTS | 4   | CATAMATER     |
| TAXON   | -    | 8            | 90  | NO./SQ. METER |
| AMPHIPODA<br>Gammarus                           | •    | 8            | -   | 84            |
| ALL AMPHIPODA                                   |      |              |     | 8             |
| TERRESTRIAL INSECT                              | 0    | -            | 0   |               |
| DIPTERA<br>CHIRONOMIDAE                         | а    | 0            | 0   | <b>‡</b>      |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS             | -    | 0            | ٥   |               |
| BAETISCIDAE<br>BAETISCA                         | 8    | -            | 8   |               |
| AMETROPIDAE<br>TRICHORYTHODES                   | •    | -            | 0   |               |
| ALL EPHEMEROPTERA                               |      | ٠            |     | 48            |
| TRICHOPTERA<br>Hydropsychidae<br>Cheumatopsyche | 91   |              | 5   |               |
| HYDROPSYCHE                                     | 89   | 11           | so. |               |
| MACROSTEMUM                                     | -    | 0            | 0   |               |
| POTAMYIA  | -    | 0            | 0   |               |
| LEPTOCERIDAE                                    | 0    | a            | -   |               |
| POLYCENTROPODIDAE<br>NEURECLIPSIS               | 8    | 0            | 0   |               |
| ALL TRICHOPTERA                                 |      |              |     | 1322          |
| ACARINA   | 0    | 0            | -   | 28            |

| TRANSECT 20 STATION 3 (CONT'D)  TAXON  TAXON  TAXON  GRAB COUNTS ESTIMATED  1 2 3 NO./SQ. METER  GASTROPODA  ABNICOLA  ELIMIA LIVESCENS  FERISSIA  PHYSA  ALL GASTROPODA  SPHARRITDAE  PISTDIUM  O 0 1 7  ALL PELECYPODA | MACHUSUUSENTHUS PONAR GRAB COUNT DATA   |    |        |     | 10/11/84     |
|--|---|----|--------|-----|--------------|
| GRAB COUNTS 1 2 3 1 2 3 1 0 0 1 0 0 2 0 0 0 0 0 0 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1  | TRANSECT 20 STATION 3 (CONT'D)          |    |        |     |              |
| 1 2 3  IVESCENS  1 0 0  1 0 0  2 0 0  PPODA  NE  0 0 1   | TAYAN                                   | 28 | 16 CQ. | MTS | ESTIMATED    |
| 1 0 0 1 12 17 3 12 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | į                                       | -  | ~      | 0   | NO./SQ. METE |
| 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0  |   |    |        |     |              |
| 1VESCENS 12 17 3 1000 0 000000 00000 00000 00000 00000 0000  | AMNICOLA                                | •  | •      | (   |              |
| 12 17 3 1 0 0 2 0 0 0000A NE   | *****                                   | -  | >      | 0   |              |
| 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | ELIMIA LIVESCENS                        | ;  | ;      | •   |              |
| 1 0 0 0 PPODA & 0 0 1  |   | 7  | 2      | •   |              |
| 2 0 0 0 0 1 0 0 1 1 0 0 1  | FERISSIA                                | •  | •      | •   |              |
| 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | 1 | -  | >      | 0   |              |
| 0000A  16  0 0 1   | PHYSA                                   | •  | •      | ,   |              |
| 0P0DA  1.E  0 0 1  |   | ~  | 0      | 0   |              |
| 16 0 0 1 PDOA  | ALL GASTROPODA                          |    |        |     | 976          |
| 0 O  | PELECYPODA                              |    |        |     | }            |
| 0  | SPHAERIIDAE                             |    |        |     |              |
|  | PISIDIUM                                | •  | (      |     |              |
| ALL PELECYPODA   | J 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | >  | 0      | -   | ^            |
|  | ALL PELECYPODA                          |    |        |     |              |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |            |             |      | 10/11/84                |
|---|------------|-------------|------|-------------------------|
| DETROIT RIVER TRANSECT 21 STATION 1   | ,          |             | ,    |                         |
| TAXON   | <b>Š</b> – | GKAB COUNTS | S 60 | ESTIMATED NO./SQ. METER |
| RHABDOCOELA   | 7          | 28          | 86   | 1088                    |
| TRICLADIDA  | 1          | •           | 7    | 207                     |
| NEWERTINEA  | . 34       | 94          | 62   | 957                     |
| NEMATODA  | 173        | 101         | 189  | 3230                    |
| HIRUDINEA<br>GLOSSIPHONIIDAE<br>BATRACOBDELLA PHALERA   | -          | •           | •    | ۲                       |
| OLIGOCHAETA<br>NAIS   | 7.         | ñ           | 9.0  |                         |
| SPIROSPERMA   | 72         | 252         | 0    |                         |
| ATACH | 43         | Q           | 46   |                         |
| OTHER<br>ALL OLIGOCHAETA  | 136        | 217         | 143  | 7658                    |
| POLYCHAETA<br>MANAYUNKIA SPECIOSA   | 261        | 261 1386    | 311  | 13484                   |
| ALL POLYCHAETA  |            |             |      | 13484                   |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA        |      |              |     | 10/11/84   |
|--|------|--------------|-----|--|
| TRANSECT 21 STATION 1 (CONT'D)               | . 6  | ٩            |     |  |
| TAXON  | š -  | 1 2 3        | 200 | NO./SQ. METER  |
| CLADOCERA<br>BOSHINA                         | ۰    | ٥            | •   | q<br>1<br>6<br>6<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| CAMPTOCERCUS                                 | 4    | 0            | 0   |  |
| 1  | 20   | 5            | 7   |  |
| ALL CLADOCERA                                |      |              |     | 344  |
| COPEPODA MACROCYCLOPSALL COPEPODA            | TE . | <del>6</del> | 9   | 768<br>798   |
| AMPHIPODA<br>GAMMARUS<br>ALL AMPHIPODA       | φ    | -            | ç   | 711  |
| DIPTERA<br>CHIRONOMIDAE                      | 12   | 29           | 49  | 916  |
| TRICHOPTERA<br>HYDROPSYCHIDAE<br>HYDROPSYCHE | -    | •            | 0   |  |
| POLYCENTROPODIDAE<br>NEURECLIPSIS            | •    | -            | . • |  |
| POLYCENTROPUS                                | •    | 0            | •   |  |
| ALL TRICHOFTERA                              |      |              |     | . 69   |
| ACARINA                                      | 5    | ო            | ၉   | 110  |
|  |      |              |     |  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |          |             |          | 10/11/84                   |
|---------------------------------------|----------|-------------|----------|----------------------------|
| TRANSECT 21 STATION 1 (CONT'D) TAXON  | GRA<br>1 | GRAB COUNTS | NTS<br>3 | ESTIMATED<br>NO./SQ. METER |
| GASTROPODA                            |          | ;           | ;        |                            |
| AMNICOLA                              | 22       | 17          | 21       |                            |
| FERISSIA                              | N        | 4           | -        |                            |
| GYRAULUS                              | ID.      | -           | 0        |                            |
| PHYSA                                 | 4        | ď           | -        |                            |
| OF FIND AGEOR                         | •        | •           | • •      |                            |
|                                       | -        | -           | >        |                            |
| ALL GASTROPODA                        |          |             |          | 654                        |
| PELECYPODA<br>SPHAER I IDAE           |          |             |          |                            |
| PISIDIUM                              | 31       | 8           | 30       | 1150                       |
|                                       |          |             |          |                            |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA                             |            |             |                | 10/11/84                                     |
|---|------------|-------------|----------------|--|
| DETROIT RIVER TRANSECT 21 STATION 2                               | <b>3</b> - | GRAB COUNTS | STAN           | ESTIMATED NO./SO. METER                      |
| RHABDOCOELA   | <b>‡</b>   | 6           | 7              | 145  |
| NEMERTINEA  | 0          | 360         | 23             | 2700   |
| NEMATODA  | ~          | ø           | •              | 011  |
| OL I GOCHAETA<br>SPIROSPERMA                                      | Ģ          | ۰           | 5              |  |
| OTHER<br>ALL OLIGOCHAETA  | 495        | 147         | 342            | 7369   |
| POLYCHAETA MANAYUNKIA SPECIOSA                                    | •          | 8           | •              | 136  |
| COPEPODA HARPACTICOIDA ALL COPEPODA                               | •          | 5           | •              | 8 8<br>9 9                                   |
| AMPHIPODA GAMMARUS ALL AMPHIPODA                                  | -          | •           | <del>-</del> . | <b>7                                    </b> |
| DIPTERA<br>Chironomidae   | ø          | . •         | -              | 8  |
| EPHEMEROPIERA<br>BAETISCIDAE<br>BAETISCA<br><br>ALL EPHEMEROPIERA | 0          | -           | ٥              |  |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA   |     |             | 10/11/84      |
|---|-----|-------------|---------------|
| TRANSECT 21 STATION 2 (CONT'D)          | GRA | GRAB COUNTS |               |
| TAXON 1 2 3 NO./SQ. METER               | -   | 1 2 3       | NO./SQ. METER |
| PELECYPODA                              |     |             |               |
| SPHAERI IDAE<br>PISIDIUM                | 0   | 39 33       | 496           |
| 4 C C C C C C C C C C C C C C C C C C C |     |             | 496           |

one one state of

| MACROZODBENTHOS PONAR GRAB COUNT DATA      |       |             |           | 10/11/84                   |
|--|-------|-------------|-----------|----------------------------|
| DETROIT RIVER TRANSECT 21 STATION 3 TAXON  | . g - | GRAB COUNTS | STAD<br>3 | ESTIMATED<br>NO./SQ. METER |
| RHABDOCOELA                                | 0     | 0           | 10        | 46                         |
| NEMERTINEA                                 | m     | =           | 12        | 888                        |
| NEMATODA                                   | ສາ    | 43          | 4         | 358                        |
| OLIGOCHAETA<br>Spirosperma                 | 0     | 89          | 60        |                            |
| OTHER<br>ALL OLIGOCHAETA                   | 0     | 63          | 230       | 2438                       |
| POLYCHAETA MANAYUMKIA SPECIOSA             | 0     | Ξ           | 5         | 25 85 85 85                |
| COPEPODA<br>DIAPTOMUS                      | 0     | -           | •         |                            |
| HARPACTICOIDA<br>                          | 0     | ø           | •         | 84                         |
| AMPHIPODA<br>GAMMARUS<br><br>ALL AMPHIPODA | 0     | -           | •         |                            |
| DIPTERA<br>CHIROMONIDAE                    | 0     | 0           | N         | 7                          |

| MACROZOOBENTHOS PONAR GRAB COUNT DATA |   |     |       | 10/11/84  |
|---------------------------------------|---|-----|-------|---|
| TRANSECT 21 STATION 3 (CONT'D)        | Š |     |       |   |
| !                                     |   | 2 4 | 4 2 3 | NO./SQ. METER   |
| EPHEMEROPTERA<br>CAENIDAE<br>CAENIS   |   | -   | •     | 6<br>1<br>9<br>6<br>8<br>8<br>8<br>8<br>4<br>1<br>1<br>4<br>4 |
| ALL EPHEMEROPTERA                     | • | •   | •     | ۲   |
| TRICHOPTERA<br>Hydropsychidae         |   |     |       |   |
| HYDROPSYCHE                           | 0 | 0   | 0     |   |
| POLYCENTROPODIDAE<br>NEURECLIPSIS     | • | 0   | 0     |   |
| ALL TRICHOPTERA                       |   |     |       | 89  |
| GASTROPODA<br>AMNICOLA                | - | 0   | 0     |   |
| ELIMIA LIVESCENS                      | _ | 10  | 0     |   |
| ALL GASTROPODA                        |   | •   |       | 84  |
| PELECYPODA<br>SPHAERITOAE             |   |     |       |   |
| PISIDIUM                              | 0 | ო   | 7     | 165   |
| ALL PELECYPODA                        |   |     |       | 165   |

#### APPENDIX C

Density and Percent Frequency of Occurrence of Macrozoobenthos:
A Summary by Taxon, Year, and Location

Density (No./m²) and percent frequency of occurrence (PCT) of macrozoobenthos taxa from five locations in the SCDRS in May and October 1983 and 1984. The upper St. Clair River location includes transects I - V; the lower St. Clair River, VI - X; Lake St. Clair, XI - XIII; upper Detroit River, XIV - XVII; and lower Detroit River, XVIII - XXI. The number of samples collected per year at each location is given as  $\underline{\mathbf{n}}$ , and a dot (.) indicates zero occurrence.

Appendix C
Table 1. Density and percent frequency of occurrence of macrozoobenthos taxa from five locations in the SCDRS in May and October, 1983 and 1984.

|                            |              |                     |              |                           |              | Locatio            | DIN .        |                              |              |                          |              |
|----------------------------|--------------|---------------------|--------------|---------------------------|--------------|--------------------|--------------|------------------------------|--------------|--------------------------|--------------|
| axon or item               | Year         | Upper St.<br>Rive   |              | Lower St.<br>Rive<br>n=90 |              | Lake St.           | Clair        | Upper Det<br>River<br>- n=72 |              | Lower De<br>Rive<br>n=72 |              |
|                            |              | Density             | PCT          | Density                   | PCT          | Density            | PCT          | Density                      | PCT          | Density                  | PCT          |
| chthyomyzon<br>fossor      | 1984         | 0.92                | 10.0         | •                         |              | •                  |              |                              | •            |                          |              |
| theostoma<br>nigrum        | 1983<br>1984 | :                   | :            | :                         | :            | :                  | •            | :                            | •            | 0.29<br>0.29             | 4.2<br>4.2   |
| theostome<br>caeruleum     | 1983         | 0.23                | 3.3          | •                         |              | •                  | •            | •                            |              |                          |              |
| ottus bairdii              | 1983         | 0.46                | 6.7          | 0.23                      | 3.3          |                    |              | •                            | •            |                          |              |
| Fish remains               | 1984         | 0.23                | 3.3          | •                         |              |                    | •            |                              | •            | •                        |              |
| Fish eggs                  | 1983<br>1984 | 46.14<br>2.30       | 26.7<br>20.0 | 8.03<br>·                 | 16.7         | :                  | •            | 2.58                         | 20.8         | :                        | :            |
| pongilla                   | 1983<br>1984 | 0.23<br>0.23        | 3.3<br>3.3   | 1.38                      | 13.3         | 2.30               | 16.7         | 3.16                         | 16.7         | :                        | :            |
| ordylophora<br>Tacustris   | 1984         | •                   |              |                           | ٠.           | •                  | ė            | 0.29                         | 4.2          | •                        |              |
| <u>ydra</u>                | 1983<br>1984 | 3624.91<br>30490.49 | 86.7<br>86.7 | 8429.05<br>21466.89       | 93.3<br>63.3 | 55.86<br>6.12      | 33.3<br>22.2 | 2524.82<br>574.75            | 95.8<br>83.3 | 885.51<br>37.88          | 66.7<br>37.5 |
| habdocoela                 | 1983<br>1984 | 158.85<br>71.85     | 70.0<br>43.3 | 603.96<br>122.35          | 96.7<br>70.0 | 29.46<br>33.29     | 77.8<br>94.4 | 154.38<br>70.30              | 83.3<br>58.3 | 419.80<br>306.17         | 87.5<br>79.2 |
| ricladida                  | 1983<br>1984 | 17.68<br>28.24      | 16.7<br>50.0 | 127.40<br>56.24           | 66.7<br>43.3 | 1.91<br>4.97       | 22.2<br>50.0 | 56.53<br>45.05               | 33.3<br>70.8 | 161.55<br>170.73         | 45.8<br>62.5 |
| emertinea                  | 1983<br>1984 | 69.56<br>233.69     | 66.7<br>53.3 | 80.57<br>28.69            | 80.0<br>36.7 | 1.91<br>0.77       | 16.7<br>5.6  | 276.61<br>237.02             | 91.7<br>83.3 | 641.89<br>808.04         | 95.8<br>91.7 |
| rematoda                   | 1983         | •                   |              | •                         |              | •                  |              | 0.29                         | 4.2          |                          |              |
| ema toda                   | 1983<br>1984 | 532.80<br>287.86    | 86.7<br>80.0 | 1010.96<br>525.22         |              | 1293.93<br>1164.61 |              | 1354.95<br>1205.74           |              | 834.43<br>1241.90        |              |
| ryozoa                     | 1984         | 0.23                | 3.3          | 0.23                      | 3.3          |                    |              | 1.15                         | 8.3          | 0.29                     | 4.           |
| irudinea                   | 1983         | 0.46                | 6.7          | •                         | •            |                    | •            |                              |              | •                        | ·            |
| rpobdellidae               | 1983<br>1984 | 1.38<br>2.98        | 13.3<br>23.3 | 1.15<br>0.69              | 6.7<br>3.3   | :                  | •            | 8.03<br>5.16                 | 20.8<br>25.0 | 0.29                     | 4.2          |
| rpobdella<br>punctata      | 1983<br>1984 | 0.46<br>0.46        | 3.3<br>3.3   | :                         | •            | •                  | •            | 1.15                         | 4.2          | •                        | ,            |
| lossiphoniidae             | 1963         | •                   | •            | •                         |              | •                  |              | 0.86                         | 12.5         |                          |              |
| lossiphonia<br>complanata  | 1983<br>1984 | :                   | •            | 0. <b>92</b><br>0.23      | 10.0<br>3.3  | 0.38               | 5.6          | •                            | :            |                          |              |
| lossiphonia<br>heteroclita | 1983<br>1984 | •                   | •            | 1.15<br>0.23              | 6.7<br>3.3   | :                  | :            | 1.43<br>1.15                 | 8.3<br>12.5  | 0.57                     | 4.           |
| elobdella<br>stagnalis     | 1983<br>1984 | 0.46                | 6.7          | 2.07<br>0.46              | 6.7<br>3.3   |                    | 44.4<br>16.7 |                              | 12.5<br>8.3  | :                        |              |
| elobdella<br>elongata      | 1983<br>1984 | 0.46                | 3.3          | 0.46<br>1.84              | 3.3<br>13.3  | 7.65<br>6.12       | 38.9<br>27.8 |                              | 12.5<br>16.7 | :                        |              |
| elobdella<br>triserialis   | 1983<br>1984 | 0.23                | 3.3          | 0.23                      | 3.3          |                    |              | 2.30                         | 8.3          | 0.29                     | 4.           |

|                                |                      |                           | <del></del>          |                         |              | Locat              | Ton         |                          |              |                        |               |
|--------------------------------|----------------------|---------------------------|----------------------|-------------------------|--------------|--------------------|-------------|--------------------------|--------------|------------------------|---------------|
| Taxon or item                  | Year                 | Upper St.<br>Rive<br>n=90 |                      | Lower St<br>Riv<br>n=91 |              | Lake St            |             | Upper Di<br>Rivi<br>n=72 |              | Lower D<br>Riv<br>n=72 | er            |
|                                |                      | Density                   | PCT                  | Density                 | PCT          | Density            | PCT         | Density                  | PCT          | Density                | PCT           |
| Helobdella<br>papillata        | 1983                 | 0,23                      | 3.3                  | <b>U.23</b>             | 3.3          | •                  | •           | •                        | •            | •                      |               |
| Actinobdella<br>inequiannulata | 1984                 | 0.23                      | 3.3                  |                         |              | •                  |             | 0.29                     | 4.2          |                        |               |
| Placobdella<br>montifera       | 1983<br>1984         | :                         | •                    | :                       | •            | 0.7/<br>0.38       | 11.1<br>5.6 | :                        | :            | •                      |               |
| Placobdella<br>papillifera     | 1984                 | 0.23                      | 3.3                  | •                       | •            | •                  |             |                          | •            | •                      |               |
| Batracobdella<br>phalera       | 1983<br>1984         | •                         | •                    | 0.23                    | 3.3          |                    | :           | •                        | :            | 0.29<br>0.29           | 4.2<br>4.2    |
| Piscicolidae                   | 1983<br>1984         | 0.23<br>0.92              | 3.3<br>3.3           | 0.23<br>0.23            | 3.3<br>3.3   | 0.38               | 5.6         | :                        | •            |                        | :             |
| <u>Piscicola</u>               | 1983<br>1984         | 0.92<br>0.69              | 10.0<br>6.7          | 0.23<br>0.92            | 3.3<br>10.0  | :                  | :           | 0.29                     | 4.2          |                        |               |
| Piscicola<br>milneri           | 1983<br>1984         | 0.46                      | 3.3                  | 0.46<br>0.46            | 6.7<br>3.3   |                    | :           | :                        | :            |                        |               |
| Oligochaeta                    | 1983<br>1984         | 3291.83<br>3927.47        | 90.0<br><b>80</b> .0 | 5975.79<br>4064.05      |              | 3627.36<br>3979.73 |             | 3048.21<br>3090.68       |              | 25742.36<br>18195.15   | 100.0         |
| <u>Nais</u>                    | 1983<br>1984         | 276.16<br>837.42          | 56.7<br>43.3         | 114.09<br>181.35        | 66.7<br>43.3 | 5.36               | 22.2        | 7.46<br>16.93            |              | 70.59<br>426.40        | 41.7<br>58.3  |
| Stylaria                       | 1983<br>1 <b>984</b> | 69.56<br>986.63           | 23.3<br>36.7         | 399.66<br>987.32        | 40.0<br>43.3 | 0.77<br>0.38       | 5.6<br>5.6  | 101.58<br>92.97          | 29.2<br>25.0 | 269.15<br>605.74       | 29.2<br>37.5  |
| Branchiura                     | 1983<br>1 <b>984</b> | •                         | :                    | :                       | •            | :                  | :           | 2.58<br>1.15             | 12.5<br>4.2  |                        |               |
| Branchiura<br>sowerbyi         | 1983<br>1984         | •                         | :                    | :                       | :            | :                  | :           | 0.29<br>0.57             | 4.2<br>4.2   | :                      |               |
| Spirosperma                    | 1983<br>1984         | 273.40<br>416.41          | 56.7<br>53.3         | 1189.10<br>494.46       | 86.7<br>90.0 | 55.09<br>45.15     |             | 347.20<br>309.90         |              | 951.51<br>1038.74      | 100.0<br>95.8 |
| Spirosperma<br>ferox           | 1983                 |                           |                      | 44.07                   | 3.3          |                    |             |                          |              |                        |               |
| Hanayunkia<br>speciosa         | 1983<br>1 <b>984</b> | 8.49<br>0.69              | 46.7<br>10.0         | 1101.18<br>1117.25      | 63.3<br>50.0 | 661.12<br>957.63   |             | 3635.87<br>1193.98       |              | 2484.08<br>1106.46     | 91.7<br>70.8  |
| Tamellatus                     | 1983<br>1 <b>984</b> | 3.90                      | 6.7                  | 0.23<br>0.69            | 3.3<br>6.7   | 6.12               | 16.7        | 1.15                     | 4.2          | 0.29<br>1.72           | 4.2<br>12.5   |
| Camptocercus                   | 1983<br>1 <b>984</b> | 0.23                      | 3.3                  | :                       | :            | :                  | :           | :                        |              | 4.59<br>7.75           | 4.2<br>16.7   |
| Chydorus                       | 1983                 | 0.23                      | 3.3                  |                         | •            | 0.38               | 5.6         |                          |              | •                      | •             |
| llona                          | 1983<br>1984         | :                         | :                    | 7.35                    | 3.3          | 0.38               | 5. <b>ć</b> | 5.45                     | 16.7         | :                      |               |
| ida<br>crystallina             | 1983<br>1 <b>984</b> | 1.38<br>0.23              | 10.0<br>3.3          | 2.75                    | 16.7         | 0.38               | 5.6         | 0.86<br>26.11            | 8.3<br>16.7  | 1.15<br>21.81          | 8.3<br>20.8   |
| Diaphanosoma                   | 1983                 | 0.23                      | 3.3                  |                         | •            |                    | •           | 0.29                     | 4.2          | •                      |               |
| Ho loped fum                   | 1983<br>1984         | 1.15<br>76.21             | 16.7<br>50.0         | 160.46                  | 50.0         | 77.67              | 50.0        | :                        | •            | 0.86                   | 8.3           |
| (CONTINUED)                    |                      |                           |                      |                         |              |                    |             |                          |              |                        |               |

|                                      |              |                           |              |                         |              | Locati           | on            |                          |              |                          |              |
|--------------------------------------|--------------|---------------------------|--------------|-------------------------|--------------|------------------|---------------|--------------------------|--------------|--------------------------|--------------|
| Taxon or item                        | Year         | Upper St.<br>Rive<br>n=90 |              | Lower St<br>Rts<br>n=90 | rer          | Lake St.<br>n=54 |               | Upper De<br>Rive<br>n=72 |              | Lower De<br>Rive<br>n=72 |              |
|                                      |              | Density                   | PCT          | Density                 | PCT          | Density          | PCT           | Density                  | PCT          | Density                  | PCT          |
| <u>Laptodora</u><br><u>kindtii</u>   | 1983<br>1984 | 0.23<br>0.23              | 3.3<br>3.3   | :                       | :            | :                | :             | :                        | •            | :                        | :            |
| <u>Dephnta</u>                       | 1983<br>1984 | 1/7.45<br>259.40          | 90.0<br>53.3 | 48.44<br>108.58         | 70.0<br>70.0 | 6.89<br>82.26    | 55.6<br>55.6  | 20.09<br>3.73            | 45.8<br>20.8 | 7. <b>46</b><br>0.57     | 37.5<br>8.3  |
| Daphnia pulex                        | 1983         | 1.61                      | 10.0         | 2.07                    | 13.3         | •                | •             | •                        | •            | •                        | •            |
| Daphnia galeata<br>mendotae          | 1983         | 6.89                      | 3.3          | 0.46                    | 6.7          |                  | •             |                          |              | •                        |              |
| Daphnia ambigua                      | 1983         | •                         | •            | 0.46                    | 6.7          | •                | •             |                          | •            | •                        | •            |
| Daphnia<br>pulicaria                 | 1983         | •                         | •            | 0.92                    | 10.0         | •                | :             | •                        | •            | •                        |              |
| <u>Bosmina</u>                       | 1983<br>1984 | 4.59<br>148.06            | 36.7<br>46.7 | 1.84<br>97.10           | 23.3<br>50.0 | 1.53<br>1.53     | 22.2<br>5.6   | 2.30<br>3.73             | 20.8<br>25.0 | 0.57<br>6.60             | 8.3<br>29.2  |
| Ilyocryptus                          | 1983<br>1984 | 7.35<br>0.46              | 13.3<br>6.7  | 51.88<br>1.61           | 40.0<br>6.7  | 62.75<br>4.21    | 38.9<br>11.1  | 2.01<br>0.57             | 12.5<br>4.2  | 13. <b>49</b><br>0.57    | 20.8<br>8.3  |
| Polyphemus<br>pediculus              | 1984         | •                         |              | •                       |              | 0.38             | 5.6           | •                        |              | •                        |              |
| Limnocalanus                         | 1983<br>1984 | 12.86<br>10.79            | 56.7<br>40.0 | 14.92<br>41.09          | 50.0<br>50.0 | 11.10<br>19.51   | 50.0<br>44.4  | 14.06<br>12.34           | 41.7<br>41.7 | 21.52<br>25.54           | 50.0<br>45.8 |
| <u>Epischura</u><br><u>lacustris</u> | 1983<br>1984 | 27.09<br>28.69            | 43.3<br>26.7 | 0.92<br>11.02           | 13.3<br>36.7 | 2.68<br>0.77     | 22.2<br>11.1  | 0.29<br>0.29             | 4.2<br>4.2   | 2.58                     | 8.3          |
| Eurytemora                           | 1983<br>1984 |                           |              | 0.23                    | 3.3          |                  | •             | :                        |              | 4.59<br>0.57             | 4.2<br>4.2   |
| Diaptomus                            | 1983<br>1984 | 86.31<br>208.44           | 86.7<br>96.7 | 107.20<br>119.37        | 66.7<br>90.0 | 12.63<br>21.04   | 66.7<br>44.4  | 35.58<br>92.68           | 66.7<br>62.5 | 57.10<br>63.13           | 70.8<br>54.2 |
| Cyclopoididae                        | 1983         | 3.21                      | 30.0         | 2.98                    | 16.7         | 4.21             | 27.8          | 1.72                     | 4.2          | 2.30                     | 16.7         |
| Cyclops<br>bicuspidatus              | 1983<br>1984 | 8.26<br>37.42             | 36.7<br>66.7 | 22.50<br>9.41           | 30.0<br>46.7 | 3.06<br>6.89     | 22.2<br>22.2  | 28.41<br>21.23           | 45.8<br>33.3 | 22.96<br>24.10           | 41.7<br>50.0 |
| Cyclops<br>vernalis                  | 1983<br>1984 | 0.23                      | 3.3          | •                       | :            | 0.38<br>1.53     | 5.6<br>16.7   | 0.57<br>0.86             | 4.2<br>4.2   | 3.16                     | 12.5         |
| Mesocyclops                          | 1983<br>1984 | 0.23<br>2.53              | 3.3<br>13.3  | 0.23<br>0.46            | 3.3<br>6.7   | 2.30<br>0.38     | 22.2<br>5.6   | 0.86<br>9.47             | 12.5<br>8.3  | :                        | •            |
| Macrocyclops                         | 1983<br>1984 | 0.92                      | 10.0         | 2.98<br>4.13            | 20.0<br>6.7  | 21.81<br>27.16   | 66.7<br>44.4  | 5.45<br>0.86             | 16.7<br>12.5 | 13.20<br>34.43           | 12.5<br>8.3  |
| Eucyclops                            | 1984         | •                         |              |                         |              |                  |               | 1.15                     | 4.2          | 0.86                     | 4.2          |
| Paracyclops                          | 1983<br>1984 | 2.53                      | 10.0         | 3.44<br>6.20            | 23.3<br>6.7  | :                | •             | 1.15<br>4.59             | 8.3<br>4.2   | 0.29                     | 4.2          |
| Harpacticoida                        | 1983<br>1984 | 155.87<br>35.35           | 43.3<br>36.7 | 344.56<br>21.58         |              | 255.19<br>46.29  | 100.0<br>88.9 | 371.31<br>236.44         | 58.3<br>41.7 | 13.77<br>27.55           | 29.2<br>45.8 |
| Unidentified nauplii                 | 1983<br>1984 | 0.23                      | 3.3          | 0.23                    | 3.3          | •                | •             | 0.29                     | 4.ż          |                          |              |
| Astacidae                            | 1983<br>1984 | 0.23                      | 3.3          | 0.23                    | 3.3          | :                | :             |                          | :            | 0.57                     | 4.2          |
| Orconectes                           | 1983<br>1984 | 0.23<br>0.23              | 3.3<br>3.3   |                         |              | •                |               |                          |              | •                        |              |
| (CONTINUED)                          |              |                           |              | ·                       | •            |                  |               |                          |              | ·                        | -            |

(

|                                   |                      |                       |                      |                    |                      | Loca               | tion               | <del></del>             |              |                        |               |
|-----------------------------------|----------------------|-----------------------|----------------------|--------------------|----------------------|--------------------|--------------------|-------------------------|--------------|------------------------|---------------|
| Taxon or item                     | Year                 | Upper S<br>Ri<br>n=9  | t. Clair<br>ver<br>U |                    | t. Clair<br>ver<br>O | Lake S             | t. Clair<br>54     | Upper to<br>R1v<br>n=/2 | er           | Lower D<br>R1v<br>n=72 | er            |
|                                   |                      | Densit                | у РСТ                | Demsity            | PCT                  | Deasit             | y PCT              | Density                 | PCT          | Density                |               |
| Ostracoda                         | 1983<br>1984         | 59.00<br>60.60        | 50.0<br>40.0         | 92.51<br>67.26     |                      |                    | 5 100.0<br>5 100.0 | 272.31<br>1185.94       | 66.7<br>70.8 | 6. <b>60</b><br>2.01   | 20.8<br>25.0  |
| Gammaridae                        | 1983                 | •                     | •                    |                    | •                    | ,                  |                    |                         | •            | 0.29                   | 4.2           |
| Gamma rus                         | 1983<br>1 <b>984</b> | 374.18<br>697.85      | 76.7<br>70.0         | 1186.80<br>971.02  |                      |                    | 100.0<br>100.0     | 217.79<br><b>9</b> 9.00 | 58.3<br>70.8 | 44.19<br>88.38         | 66.7<br>75.0  |
| <u>Pontoporeia</u><br><u>hoyi</u> | 1983<br>1 <b>984</b> | 20.66<br>4.59         | 33.3<br>6.7          | 11.71<br>0.23      | 40.0<br>3.3          |                    |                    | 0.29                    | 4.2          | 0.29                   | 4.2           |
| Hyalella azteca                   | 1983<br>1984         | 31.91<br>46.14        | 73.3<br>43.3         | 320.00<br>91.82    | 76.7<br>63.3         | 1.53               | 16.7               | 83.21<br>151.79         | 33.3<br>41.7 | 30.42<br>23.82         | 37.5<br>25.0  |
| <u>Asellus</u>                    | 1983<br>1984         | 1.15<br>0.69          | 13.3<br>10.0         | 130.85<br>26.63    | 56.7<br>30.0         | 0.38               | 5.6                | 6.60<br>16.93           | 16.7<br>20.8 | 0.86<br>5.45           | 4.2<br>8.3    |
| Lirceus                           | 1983<br>1984         | 0.46                  | 3.3                  | 6.89<br>12.17      | 23.3<br>10.0         | •                  | :                  | 6.03<br>0.29            | 8.3<br>4.2   | •                      | :             |
| Terrestrial insect                | 1983<br>1984         | 6.20<br>11.71         | 36.7<br>56.7         | 3.67<br>12.17      | 36.7<br>46.7         | 1.53<br>1.91       |                    | 2.30<br>3.73            | 20.8         | 2.58<br>1.43           | 29.2<br>16.7  |
| Chironomidae                      | 1983<br>1984         | 1814.41<br>1560.06    | 100.0<br>100.0       | 5520.12<br>2085.51 |                      | 791.97<br>667.62   | 100.0              | 1466.57<br>1624.11      | 95.8         | 184.22<br>256.82       | 91.7<br>100.0 |
| Ceratopogonidae                   | 1983<br>1984         | 1.84<br>2.53          | 13.3<br>16.7         | 44.07<br>56.70     | 73.3<br>63.3         | 0.38<br>1.53       | 5.6                | 37.59<br>45.34          | 45.8<br>50.0 | 42.75<br>13.77         | 29.2<br>20.8  |
| Empididae                         | 1983<br>1984         | 21.35<br>18.59        | 53.3<br>56.7         | 6.66<br>4.13       | 30.0<br>33.3         | :                  | :                  | 0.29<br>0.57            | 4.2<br>8.3   | 1.43                   | 12.5<br>20.8  |
| Tipulidae                         | 1983                 | :                     | •                    | 0.23               | 3.3                  |                    |                    | •                       | •            | 0.29                   | 4.2           |
| Chaoborus                         | 1983<br>1984         | :                     | :                    | :                  | :                    | :                  |                    | 0.29                    | 4.2          | 0.57                   | 8.3           |
| Psychodidae                       | 1983<br>1984         | 0.23<br>5.74 <i>1</i> | 3.3<br>10.0          | 0.23               | 3.3                  |                    | •                  | •                       | •            | 1.15<br>3.44           | 12.5<br>8.3   |
| Trichorythodes                    | 1983<br>1984         |                       |                      | 0.23               | 3.3                  | •                  | •                  | 0.29                    | 4.2          | 0.29<br>1.15           | 4.2<br>12.5   |
| Eph <b>eme</b> roptera            | 1983                 | 0.46                  | 3.3                  |                    | •                    |                    |                    | 0,29                    | 4.2          |                        |               |
| <u>Caenis</u>                     | 1983<br>1984         | 25.48<br>128.09       | 26.7<br>53.3         | 375.09<br>322.30   | 90.0<br>83.3         | 0.38<br>1.53       | 5.6<br>22.2        | 35.87<br>22.38          | 41.7         | 12.05<br>16.07         | 20.8<br>20.8  |
| Brachycercus                      | 1984                 | .′                    | •                    |                    | •                    |                    |                    | 0.57                    | 8.3          |                        | 20.0          |
|                                   | 1983<br>1984         | 48.21<br>309.90       | 36.7<br>53.3         | 340.66<br>999.48   | 90.0<br>76.7         | 1288.57<br>1131.71 |                    | 66.28<br>72.02          | 58.3<br>58.3 | 6.03<br>5.74           | 41.7<br>33.3  |
|                                   | 1983<br>1984         | 46.14<br>4.36         | 30.0<br>20.0         | 21.12<br>0.92      |                      | 0.38               | 5.6                | 1.43<br>0.29            | 8.3<br>4.2   |                        |               |
| <u>laetis</u>                     | 1983                 | 0.69                  | 10.0                 |                    | •                    |                    | •                  | 0.86                    | 4.2          | •                      | •             |
|                                   | 1983<br>1984         | 0.92<br>6.66          | 13.3<br>13.3         | 0.69<br>11.02      | 10.0                 | 0.38               | 5.6                | 32.42<br>32.42          | 54.2         | 5.45<br>6.31           | 33.3<br>29.2  |
|                                   | 1983<br>1 <b>984</b> | 14.92<br>20.89        | 43.3<br>36.7         | 4.36<br>9.18       | 16.7<br>23.3         | 0.38               | 5.6                | 1.15                    | 8.3          | 1.15                   | 12.5          |
| rychius                           | 1983                 | •                     |                      | 0.46               | 6.7                  |                    |                    | •                       |              |                        |               |

|                        |                      |                          |              |                |                 | Locat          | ion          | · ·                    |              |                |              |
|------------------------|----------------------|--------------------------|--------------|----------------|-----------------|----------------|--------------|------------------------|--------------|----------------|--------------|
| Taxon or item          | Year                 | Upper St<br>Rive<br>n=90 |              |                | t. Clair<br>ver | Lake St        |              | Upper U<br>Riv<br>n=72 |              | Lower Do       |              |
|                        |                      | Density                  | PCT          | Density        | PCT             | Density        | PCT          | Density                | PCT          | Density        | PCT          |
| Dubiraphia             | 1983<br>1984         | 2.30<br>14.00            | 16./<br>23.3 | 2./5<br>0.23   | 20.0            | :              | :            | :                      | :            | :              | :            |
| Lepidoptera            | 1983<br>1984         | 4.36<br>1.38             | 10.0<br>10.0 | 3.44<br>0.92   | 23.3<br>13.3    |                | •            | 2.01<br>2.01           | 12.5<br>8.3  | 2.58<br>2.58   | 20.8<br>16.7 |
| Pyral Idae             | 1983<br>1984         | :                        | :            | 0.46           | 6.7             | :              | <b>.</b>     | 0.29                   | 4.2          |                |              |
| Brachycentrus          | 1 <b>983</b><br>1984 | 7.12<br>7.58             | 30.0<br>20.0 | 30.07<br>16.76 | 33.3<br>33.3    |                |              | 0.29                   | 4.2          | •              |              |
| Micrasema              | 1984                 | 0.23                     | 3.3          | 1.38           | 10.0            |                |              |                        | •            |                |              |
| <u>Protoptila</u>      | 1983<br>1984         | 8.03<br>26.40            | 16.7<br>13.3 | :              | :               | •              |              | 1.15                   | 8.3          | •              |              |
| Polycentropodi-<br>dae | ·1983                | 0.23                     | 3.3          | 0.69           | 3.3             |                | •            |                        |              |                |              |
| Phylocentropus         | 1983<br>1984         | 0.23                     | 3.3          | •              | :               |                | :            | 2.87<br>13.20          | 16.7<br>20.8 | :              |              |
| Polycentropus          | 1983<br>1984         | 0.23<br>0.46             | 3.3<br>6.7   | 21.81<br>7.12  | 30.0<br>33.3    | :              | •            | 0.57<br>0.57           | 4.2          | 5.45<br>6.60   | 20.8         |
| Neureclipsis           | 1983<br>1984         | 9.41<br>19.05            | 20.0<br>23.3 | 25.94<br>15.84 | 33.3<br>26.7    | :              | :            | 1.15                   | 8.3          | 15.21<br>47.63 | 20.8         |
| Trichoptera            | 1984                 | 0.23                     | 3.3          |                |                 |                | •            | 0.29                   | 4.2          |                |              |
| Leptoceridae           | 1983                 | 0.46                     | 6.7          |                | •               | •              | •            | •                      |              | •              |              |
| <u>Decetis</u>         | 1983<br>1984         | 22.73<br>2.30            | 40.0<br>20.0 | 43.16<br>35.81 | 60.0<br>63.3    | 46.68<br>35.58 | 83.3<br>94.4 | 13.49<br>15.49         | 25.0<br>41.7 | 5.74           | 20.8         |
| riaenodes              | 1983<br>1984         | 2.30<br>1.84             | 6.7<br>10.0  | 2.98<br>2.30   | 33.3<br>23.3    | •              | :            | 0.57                   | 8.3          | 0.29           | 4.2          |
| lystacides             | 1983<br>1984         | 3.67<br>5.51             | 26.7<br>23.3 | 13.31<br>4.36  | 40.0<br>16.7    | 0.38           | 5.6          | 0.29                   | 4.2          |                |              |
| ietodes                | 1983<br>1984         | 0.46<br>0.46             | 6.7<br>6.7   | 3.44<br>4.59   | 20.0<br>26.7    | :              | :            | 0.57<br>0.29           | 4.2<br>4.2   | •              | •            |
| eraclea                | 1983<br>1984         | 4.59<br>4.59             | 36.7<br>30.0 | 10.33<br>15.38 | 43.3<br>40.0    | :              |              | 2.01<br>4.02           | 20.8         | 0.86<br>0.86   | 8.3<br>4.2   |
| ectopsyche             | 1983<br>1984         | 0.46<br>0.46             | 6.7<br>3.3   | 3.21<br>0.69   | 23.3<br>6.7     | :              |              | 0.29<br>0.57           | 4.2<br>8.3   | 0.57           | 4.2          |
| ydroptilidae           | 1983<br>1984         | 0.23<br>0.23             | 3.3<br>3.3   |                |                 | :              | •            | •                      | :            | •              | •            |
| ydroptila              | 1983<br>1984         | :                        |              | 0.92<br>0.92   | 10.0<br>6.7     | •              | •            | 0.29                   | 4.ż          | 7.46<br>7.17   | 20.8<br>33.3 |
|                        | 1983<br>1984         | :                        | •            | 0.23           | 3.3<br>3.3      | •              | ·<br>:       | 0.29                   | 4.2          | 2.0i           | 16.7         |
|                        | 1984                 | 0.23                     | 3.3          | •              | • •             |                | •            | 0.29                   | ٠.٤          | 2.01           |              |
| ycnopsyche             | 1983                 |                          | •            | 0.46           | 6.7             |                | •            | •                      | •            | •              | •            |
| ydropsychidae          | 1983                 | 7.12                     | 6.7          | •              |                 |                |              | •                      |              | •              | •            |

|                     | Year         | Location                         |              |                                  |              |                |               |                                |              |                                |                       |  |
|---------------------|--------------|----------------------------------|--------------|----------------------------------|--------------|----------------|---------------|--------------------------------|--------------|--------------------------------|-----------------------|--|
| Taxon or item       |              | Upper St. Clair<br>River<br>n=90 |              | Lower St. Clair<br>River<br>n=90 |              | Lake St. Clair |               | Upper Detroit<br>River<br>n=72 |              | Lower Detroit<br>River<br>n=72 |                       |  |
|                     |              | Density                          | PCT          | Density                          | PCT          | Density        | PCT           | Density                        | PCT          | Density                        | PCT                   |  |
| Cheuma tops y che   | 1983<br>1984 | 94.81<br>130.39                  | 60.0<br>63.3 | 22.50<br>20.66                   | 26.7<br>36.7 | 5.36           | 11.1          | 471.45<br>927.69               | 66.7<br>83.3 | 28.12<br>41.61                 | 37.5<br>50.0          |  |
| <u>Hydropsyche</u>  | 1983<br>1984 | 75.98<br>140.26                  | 70.0<br>66.7 | 11.48<br>32.37                   | 40.0<br>26.7 |                |               | 108.46<br>307.32               | 45.8<br>66.7 | 20.09<br>46.20                 | 41.7<br>54.2          |  |
| Macros temum        | 1984         | •                                |              |                                  |              | •              | •             |                                |              | 0.29                           | 4.2                   |  |
| <u>Potamyia</u>     | 1984         | •                                | •            | •                                | •            | •              |               | •                              | •            | 0.29                           | 4.2                   |  |
| Corixidae           | 1983         | 0.46                             | 6.7          | •                                | •            | •              | •             | •                              |              | •                              |                       |  |
| Coenagrionidae      | 1983<br>1984 | •                                | •            | 0.92<br>0.46                     | 13.3<br>3.3  | :              | •             | :                              | :            | 4.02<br>4.02                   | 20.8<br>20.8          |  |
| Gomphus             | 1983<br>1984 | 0.92<br>1.38                     | 10.0<br>13.3 | 0.46                             | 6.7          | :              | •             | •                              | •            | 0.29                           | 4.ż                   |  |
| Stylurus<br>notatus | 1983         | 0.23                             | 3.3          |                                  |              |                | •             |                                | •            | •                              |                       |  |
| Plecoptera          | 1983<br>1984 | 1.15<br>1.15                     | 10.0<br>13.3 | :                                | :            | :              | :             | :                              | :            | :                              | :                     |  |
| Perlodidae          | 1983         | 0.23                             | 3.3          | 0.23                             | 3.3          | •              | •             | •                              |              |                                |                       |  |
| I sogeno i des      | 1983<br>1984 | 0.23<br>1.15                     | 3.3<br>10.0  | :                                | :            | :              | :             | •                              | :            | :                              | :                     |  |
| Acarina             | 1983<br>1984 | 70.93<br>64.51                   | 73.3<br>73.3 | 19.51<br>26.63                   | 80.0<br>73.3 | 17.60<br>5.74  | 100.0<br>66.7 | 28.98<br>24.10                 | 83.3<br>66.7 | 43.33<br>96.99                 | 66.7<br>70.8          |  |
| Tardigrada          | 1983<br>1984 | 1.38                             | 6.7          | 0.46                             | 6.7          | :              | :             | 0.29                           | 4.2          | 4.88<br>6.89                   | 4.2<br>8.3            |  |
| Sastropoda          | 1983         | 0.23                             | 3.3          | •                                | •            | •              | •             | 0.29                           | 4.2          |                                |                       |  |
| Ferrisia            | 1983<br>1984 | 3.90<br>55.55                    | 20.0<br>16.7 | :                                | :            | :              | :             | 3.44<br>2.30                   | 12.5<br>12.5 | 66.28<br>298.14                | 54.2<br>62.5          |  |
| L <u>ymnaea</u>     | 1983<br>1984 | 8.26<br>3.67                     | 30.0<br>23.3 | 0.23                             | 3.3          | :              | :             | 2.01                           | 4.2          | •                              | :                     |  |
| Physa               | 1983<br>1984 | 75.06<br>119.37                  | 53.3<br>53.3 | 129.93<br>89.30                  | 80.0<br>80.0 | 0.38           | 5.6           | 24.39<br>25.25                 | 33.3<br>41.7 | 24.10<br>56.53                 | 45.8<br>62.5          |  |
| ielisoma            | 1983         | •                                | •            | •                                | •            |                | •             | 0.29                           | 4.2          |                                |                       |  |
| Syraulus            | 1983<br>1984 | 67.95<br>14.23                   | 40.0<br>26.7 | 166.89<br>80.57                  | 73.3<br>66.7 | 26.40<br>29.46 | 50.0<br>50.0  | 36.73<br>66.57                 | 33.3<br>37.5 | 5.74<br>49.35                  | 29.2<br>33.3          |  |
| <u>Umnicola</u>     | 1983<br>1984 | 566.77<br>363.85                 | 66.7<br>60.0 | 771.77<br>323.44                 | 90.0<br>90.0 |                | 77.8<br>61.1  | 186.80<br>218.94               | 87.5<br>91.7 | 88.38<br>96.99                 | 79.2<br>75.0          |  |
| Bithynia            | 1983<br>1984 | •                                | •            | :                                | •            | 0.77           | 11.1          | 0.57<br><b>0.86</b>            | 8.3<br>8.3   | 0.29                           | 4.2                   |  |
| subglobosus         | 1983<br>1984 | :                                | :            | 0.23                             | 3.3          | 0.38           | 5.6           | :                              | •            | :                              | :                     |  |
| Pleurocera<br>acuta | 1983<br>1984 | 2.30<br>1.84                     | 6.7<br>6.7   | 0.23                             | 3.3          | 4.59<br>0.38   | 22.2<br>5.6   | 7.75<br>11.76                  | 41.7<br>41.7 | 0.86                           | 8.3                   |  |
| limia<br>Tivescens  | 1983<br>1984 | 197.42<br>236.67                 | 60.0<br>53.3 | 145.31<br>104.45                 |              |                | 33.3<br>61.1  | 150.07<br>191.10               |              | 79.77<br>51.08                 | 62.5<br>7 <b>9</b> .2 |  |

|                                      |              |                                  | Location             |                                  |              |                  |              |                                |              |                          |              |  |
|--------------------------------------|--------------|----------------------------------|----------------------|----------------------------------|--------------|------------------|--------------|--------------------------------|--------------|--------------------------|--------------|--|
| laxon or item                        | Year         | Upper St. Clair<br>River<br>n=90 |                      | Lower St. Clair<br>River<br>n=90 |              | Lake St. Clair   |              | Upper Detroit<br>River<br>n=72 |              | Lower Detroit River n=/2 |              |  |
|                                      |              | Density                          | PCT                  | Density                          | PCT          | Density          | PCT          | Density                        | PCT          | Density                  | PCT          |  |
| Valvata sincera                      | 1983<br>1984 | U.92<br>1.61                     | 10.0<br>13.3         | 1.38<br>0.23                     | 6.7<br>3.3   | 3.83             | 5.6          | v.29                           | 4.2          | 1.15                     | 8.3<br>4.2   |  |
| <u>Valvata</u><br><u>tricarinata</u> | 1983<br>1984 | 138.88<br>147.37                 | 16.7<br>33.3         | 20. <b>89</b><br>3.21            | 50.0<br>20.0 | 11.10<br>6.89    | 38.9<br>44.4 | 33. <b>86</b>                  | 12.5         | 0.57<br>0.29             | 8.3<br>4.2   |  |
| Campe I ome                          | 1983<br>1984 | 0.23                             | 3.3                  |                                  | •            | 0.38             | 5. <b>ć</b>  | 0.29                           | 4.2          | 0.86                     | 8.3          |  |
| Untonidae                            | 1983<br>1984 | 0.46                             | 6.7                  | 0.69<br>1.15                     | 10.0<br>13.3 | 1.15<br>0.77     | 16.7<br>11.1 | 5. <b>45</b><br>7.17           | 37.5<br>50.0 | :                        | :            |  |
| Anodonta<br>grandis                  | 1984         | •                                |                      | 0.38                             | 5.6          |                  |              |                                |              |                          |              |  |
| Lampsilis                            | 1984         |                                  | •                    | 0.23                             | 3.3          | 0.38             | 5.6          | 1.15                           | 12.5         | •                        |              |  |
| Lampsilis                            | 1983         |                                  |                      |                                  |              | 0.77             | 11.1         | 0.29                           | 4.2          | 0.29                     | 4.2          |  |
| radiata<br>Siliquoidea               | 1984         | •                                | •                    |                                  |              | 0.38             | 5.6          | 0.57                           | 8.3          | •                        |              |  |
| Lampsilis<br>ventricosa              | 1983<br>1984 | :                                | :                    | •                                | •            | :                | •            | 0.29<br>0.29                   | 4.2<br>4.2   | :                        | :            |  |
| <u>fragilis</u>                      | 1983         |                                  |                      |                                  | •            | 0.38             | 5.6          | 0.29                           | 4.2          |                          |              |  |
| Truncilla                            | 1984         | •                                | •                    | •                                |              |                  |              | 0.29                           | 4.2          |                          |              |  |
| Truncilla<br>donaciformis            | 1983         |                                  | •                    |                                  |              |                  | •            | 0.29                           | 4.2          |                          |              |  |
| Truncilla<br>truncata                | 1983<br>1984 | •                                | •                    | :                                | •            | :                | •            | 0.29<br>0.86                   | 4.2<br>4.2   | •                        | :            |  |
| Proptera alata                       | 1983<br>1984 | :                                |                      | :                                | :            | u.38             | 5.6          | 0.29                           | 4.2          | :                        | •            |  |
| Elliptio                             | 1983         | •                                |                      |                                  |              |                  |              | v.8 <b>6</b>                   | 12.5         | •                        |              |  |
| <u>dilitatus</u>                     | 1984         | •                                |                      |                                  |              |                  |              | 0.29                           | 4.2          |                          |              |  |
| ordatum                              | 1983         | •                                |                      |                                  | •            | •                |              | 0.57                           | 8.3          | •                        |              |  |
| tychobranchus<br>fasciolaria         | 1984         | •                                |                      |                                  | •            |                  |              | 0.29                           | 4.2          | •                        |              |  |
| Pisidium .                           | 1983<br>1984 | 167.58<br>269.04                 | 70.0<br>70.u         | 372.80<br>226.34                 | 90.0<br>90.0 | 613.30<br>729.60 |              | 352.94<br>382.78               |              | 318.80<br>248.21         | 87.5<br>62.5 |  |
| Sphaerium                            | 1983<br>1984 | 11.UZ<br>1.15                    | <i>3</i> 6.7<br>10.0 | 40.86<br>19.74                   | 53.3<br>40.0 | 34.82<br>24.49   | 94.4<br>83.3 | 51.36<br>73.46                 | 70.8<br>79.2 | 1.15<br>0.29             | 8.3<br>4.2   |  |

#### APPENDIX D

Density and Total Biomass of Macrozoobenthos - A Summary by Year, Month, Transect, and Station

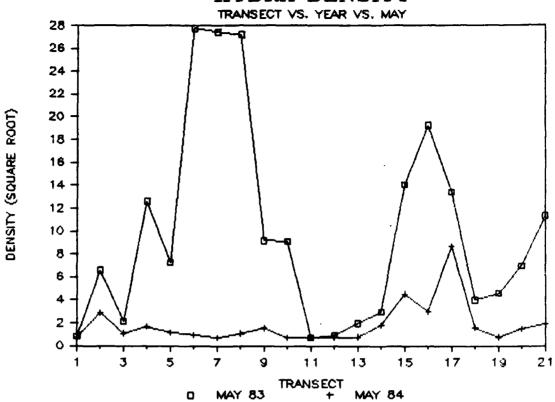
The density (square root of no./ $m^2$  + 0.5) of 24 macrozoobenthos taxa and total biomass (ash free dry weight in  $g/m^2$ ) are plotted in three different arrangements: transects by year for May, transect by year for October, and transect by station with months combined. These plots are part of the ANOVA results and should be used when interpreting main effect results in Tables 8 to 19 in the main body of the report.

#### Index

|               | <u>Figure</u> |                         | <u>Figure</u> |
|---------------|---------------|-------------------------|---------------|
| Hydra         | 1-3           | <b>Oecetis</b>          | 40-42         |
| Turbellaria   | 4-6           | Caenis                  | 43-45         |
| Nemertinea    | 7-9           | Hexagenia               | 46-48         |
| Nematoda      | 10-12         | Cheumatopsyche          | 49-51         |
| Hirudinea     | 13-15         | Hydropsyche             | 52-54         |
| 01igochaeta   | 16-18         | Acarina                 | 55-57         |
| Manayunkia    | 19-21         | Sphaeriidae             | 58-60         |
| Harpacticoida | 22-24         | Physa                   | 61-63         |
| Ostracoda     | 25-27         | Gyraulus                | 64-66         |
| Isopoda       | 28-30         | Amnicola                | 67∸69         |
| Gammarus      | 31-33         | Elimia                  | 70-72         |
| Hyalella      | 34-36         | Macrozoobenthos Biomass | 73-75         |
| Chironomidae  | 37-39         |                         |               |

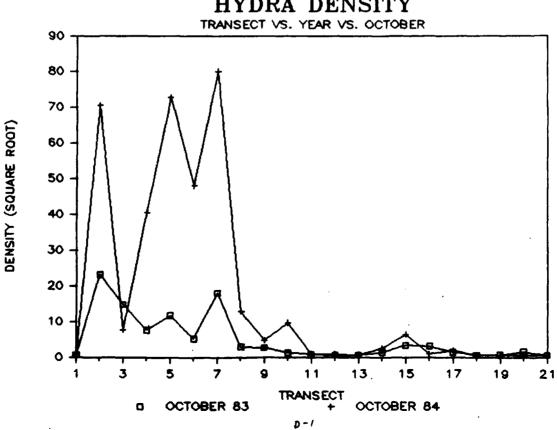


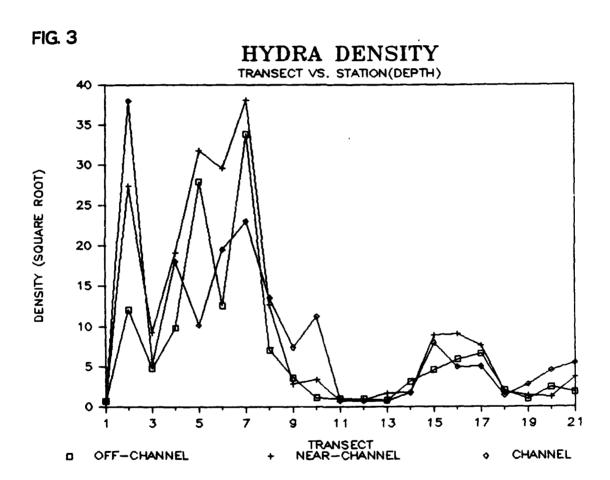
#### HYDRA DENSITY



# FIG. 2

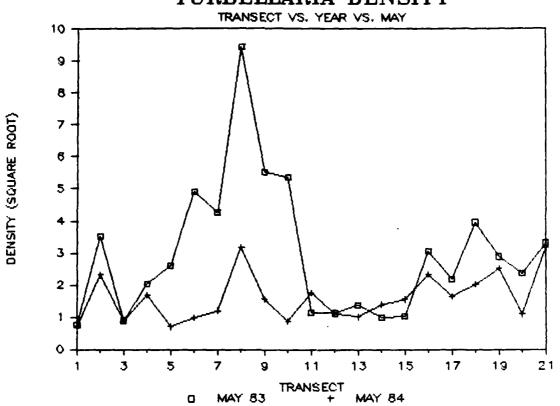
## **HYDRA DENSITY**





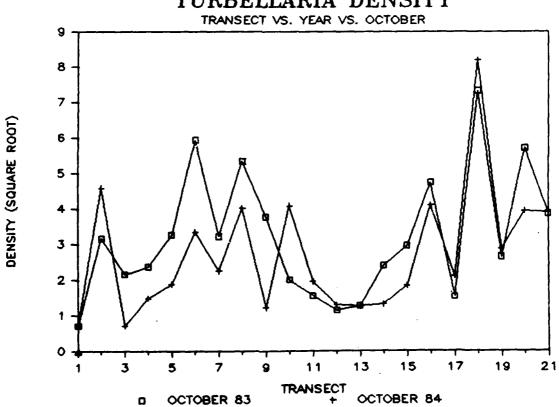


## TURBELLARIA DENSITY



## FIG. 5

### TURBELLARIA DENSITY





## TURBELLARIA DENSITY

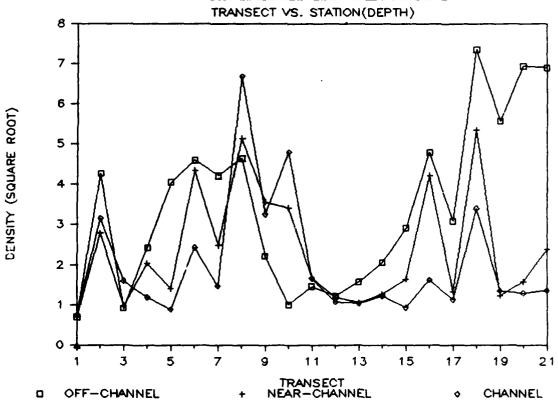


FIG. 7

### **NEMERTINEA DENSITY**

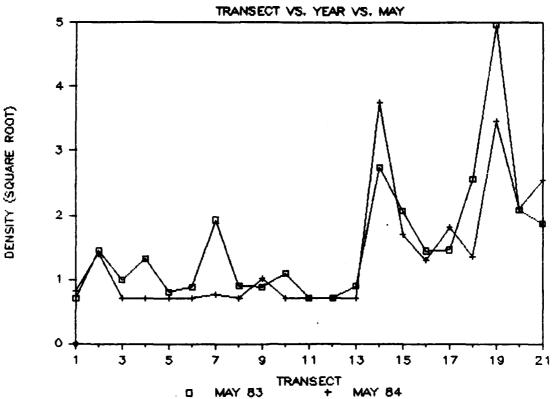
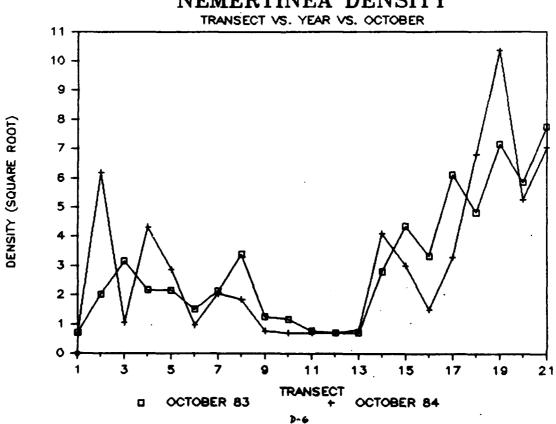
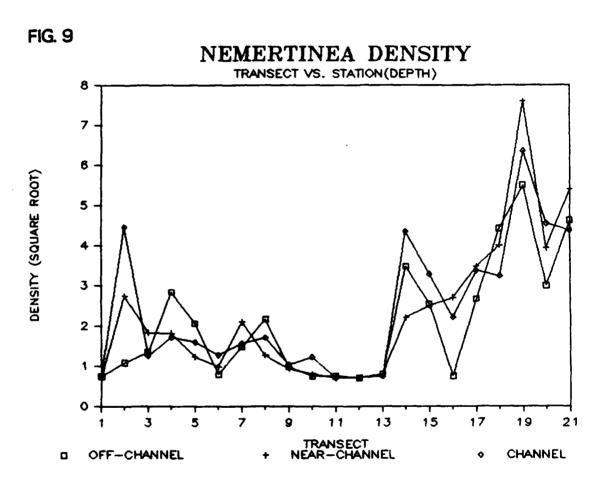


FIG. 8

#### **NEMERTINEA DENSITY**







#### **NEMATODA DENSITY**

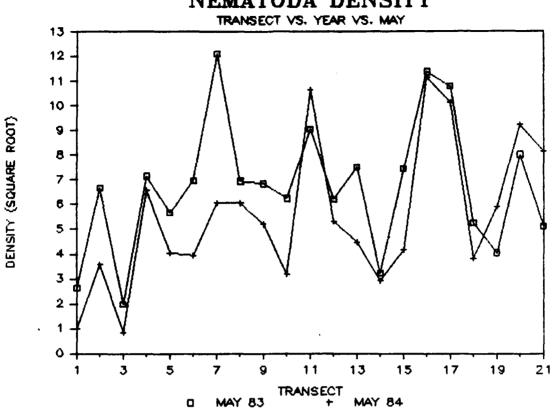
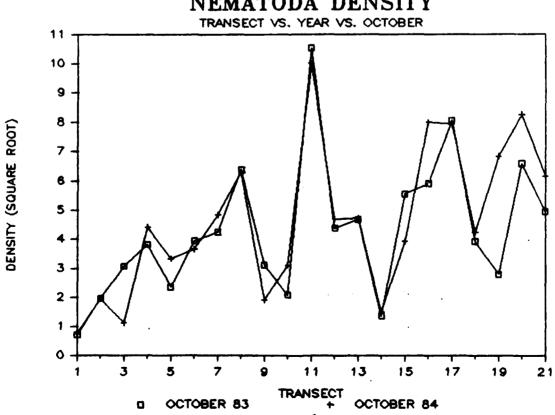
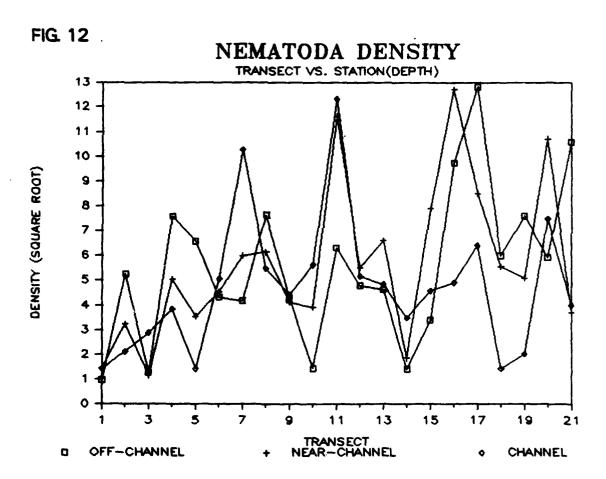


FIG. 11

### **NEMATODA DENSITY**







### HIRUDINEA DENSITY

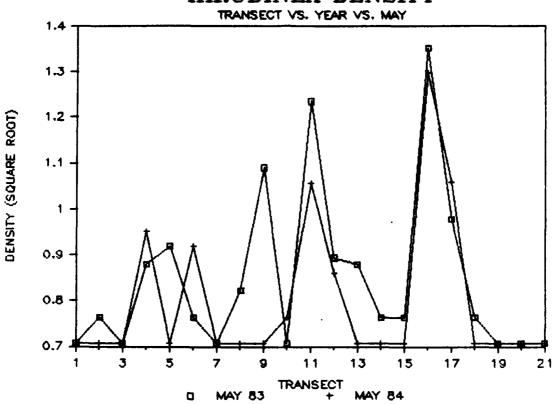
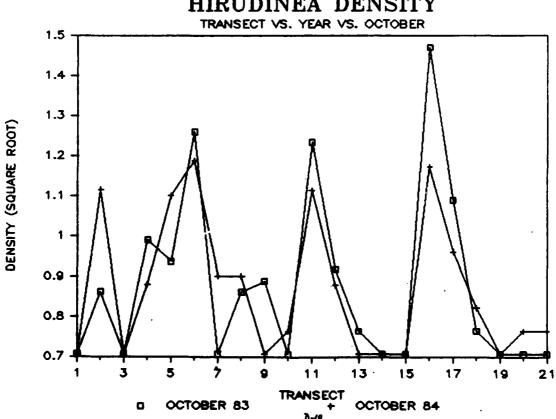


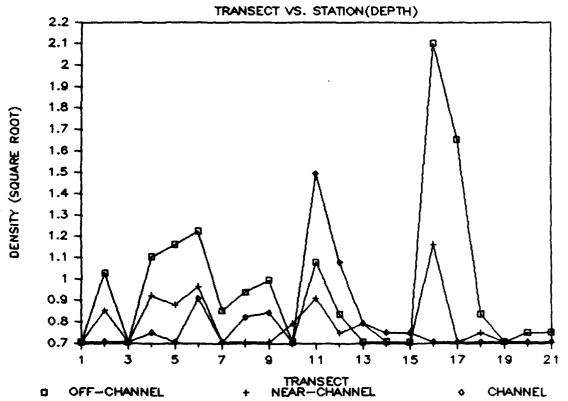
FIG. 14

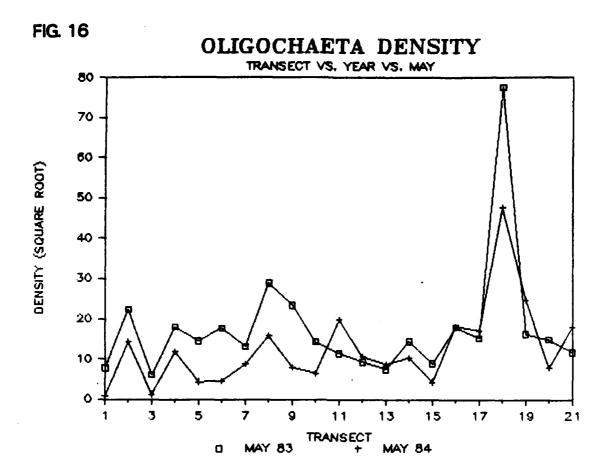
## HIRUDINEA DENSITY

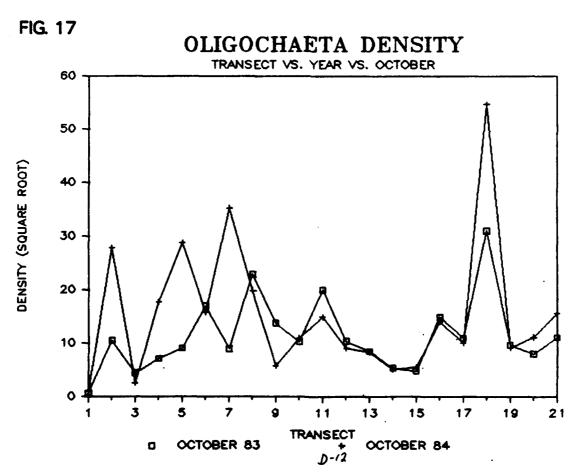


The Bridge

## HIRUDINEA DENSITY







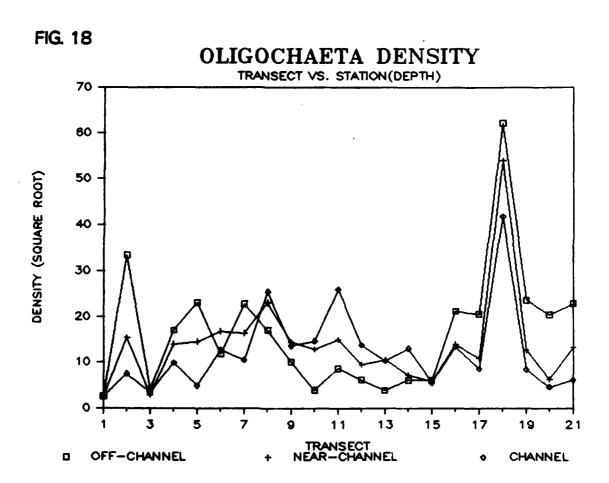
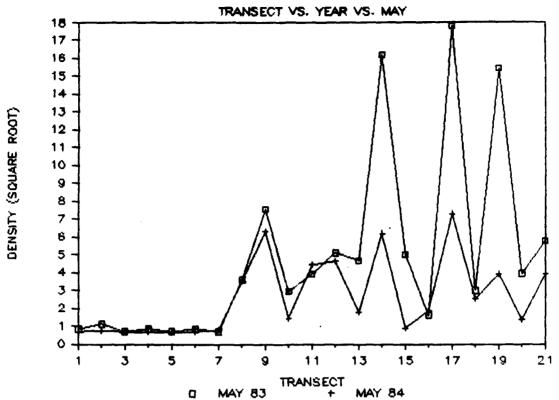


FIG. 19

#### MANAYUNKIA DENSITY





## MANAYUNKIA DENSITY

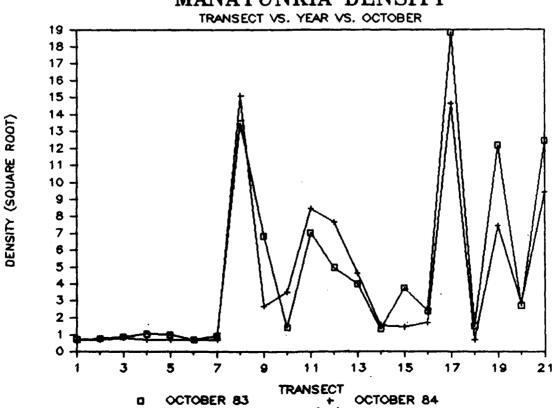
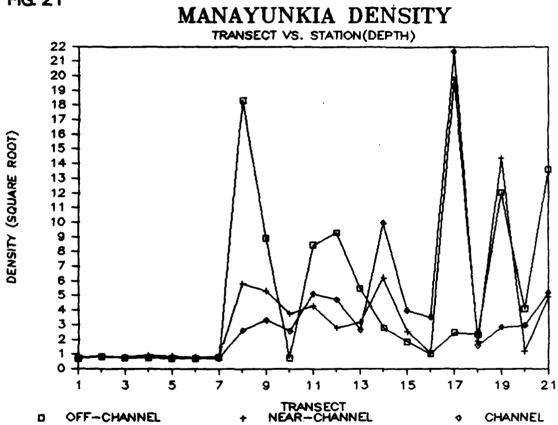


FIG. 21





## HARPACTICOIDA DENSITY

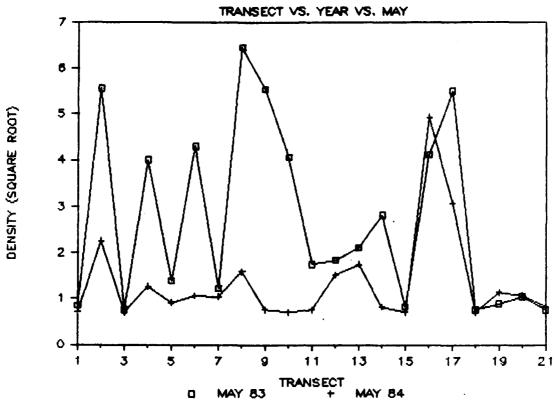
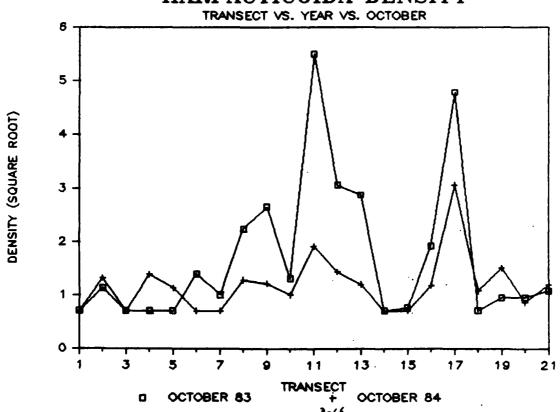
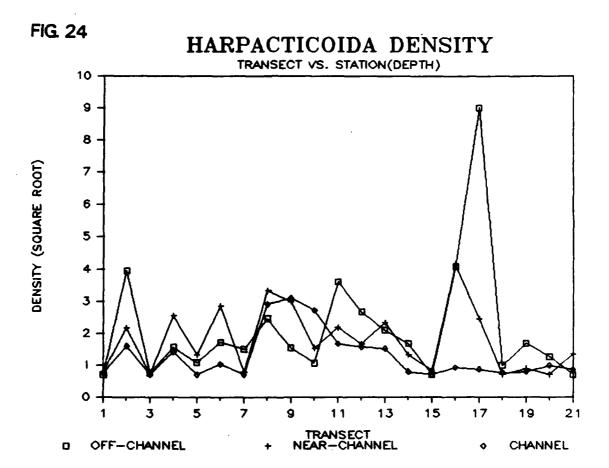


FIG. 23

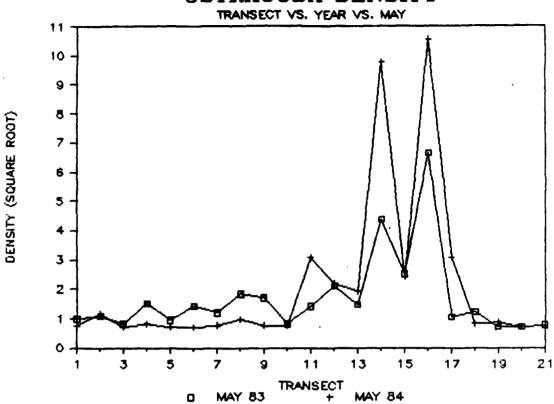
# HARPACTICOIDA DENSITY

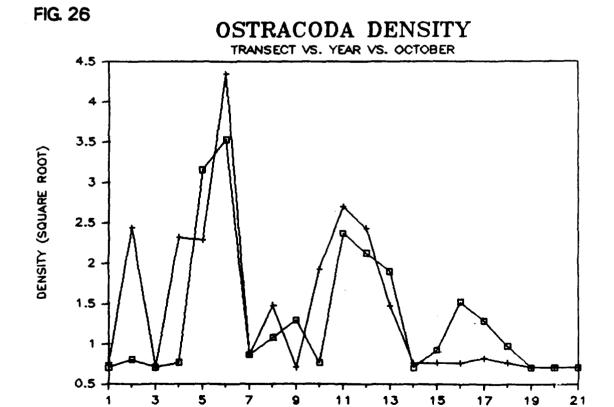






## **OSTRACODA DENSITY**

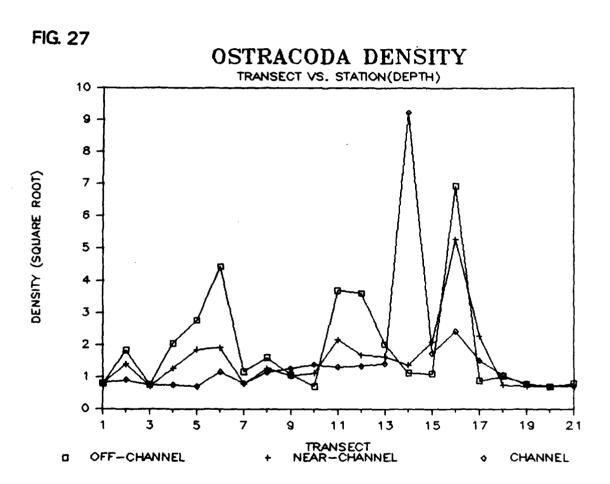




TRANSECT

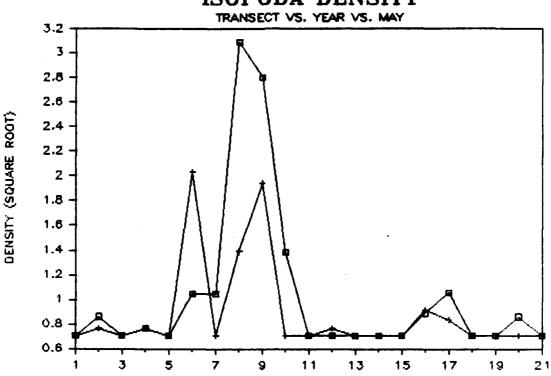
OCTOBER 84

OCTOBER 83





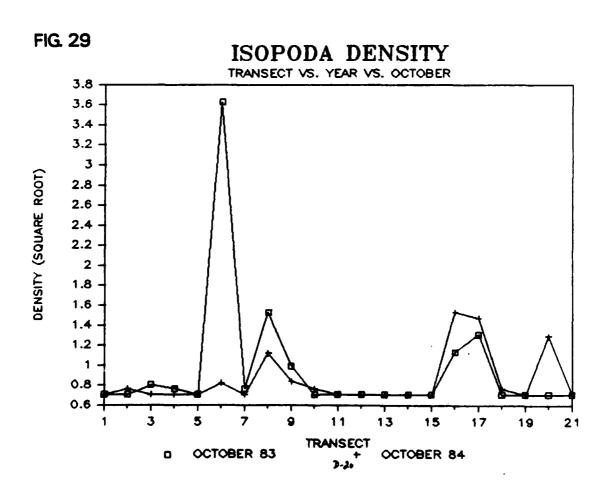
## ISOPODA DENSITY



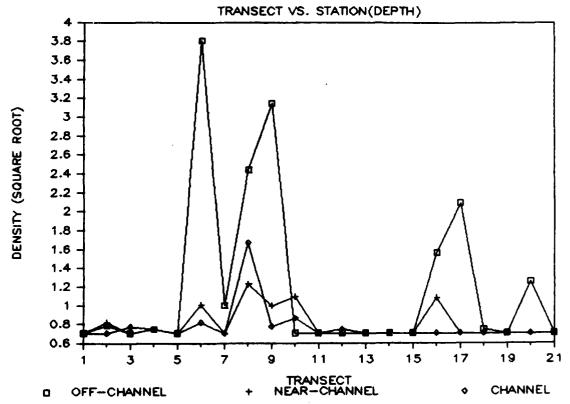
TRANSECT

MAY 84

MAY 83



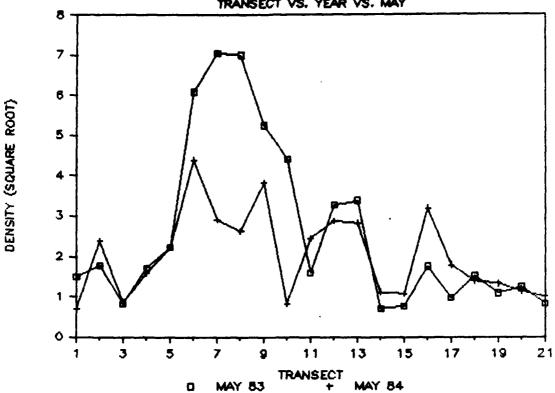
# ISOPODA DENSITY





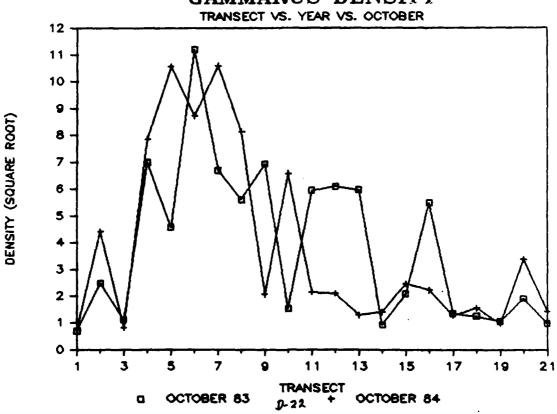
## **GAMMARUS DENSITY**

TRANSECT VS. YEAR VS. MAY

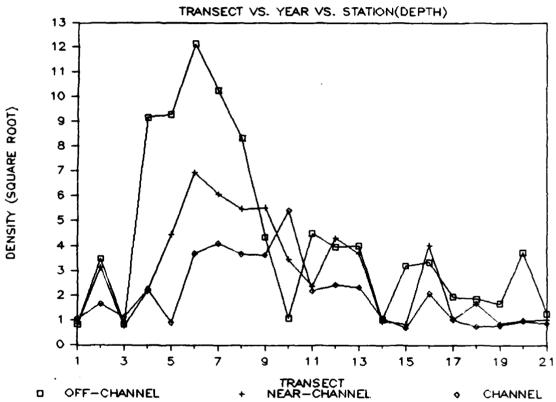


**IG. 32** 

## GAMMARUS DENSITY



# GAMMARUS DENSITY





## HYALELLA DENSITY

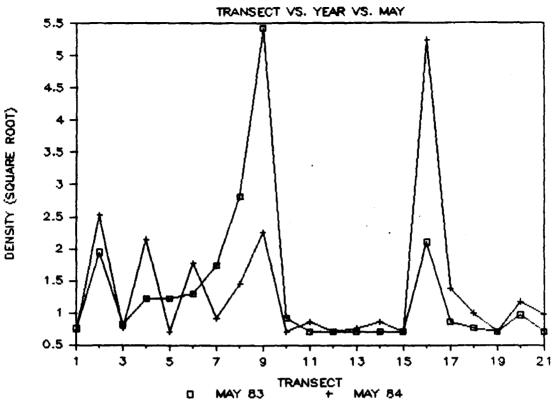
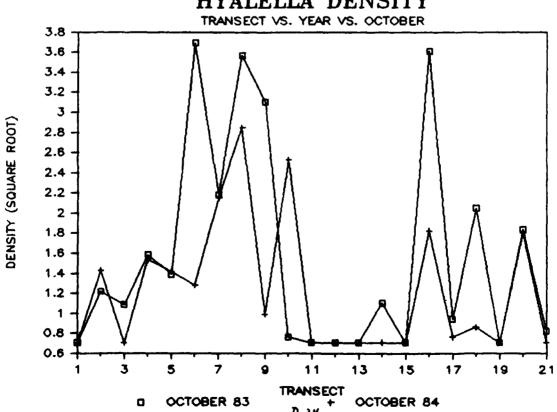
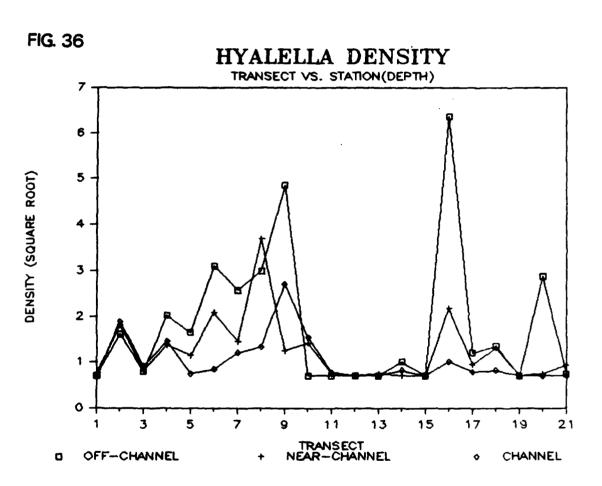


FIG. 35







# CHIRONOMIDAE DENSITY

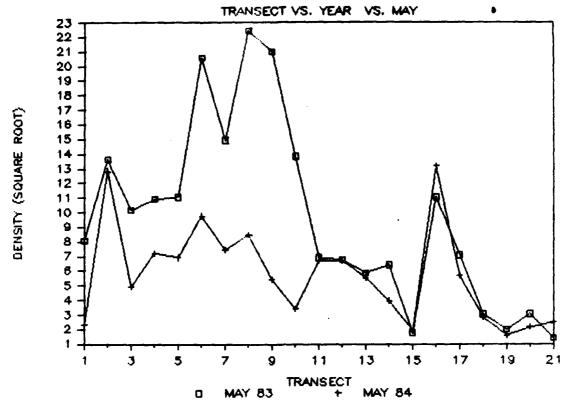
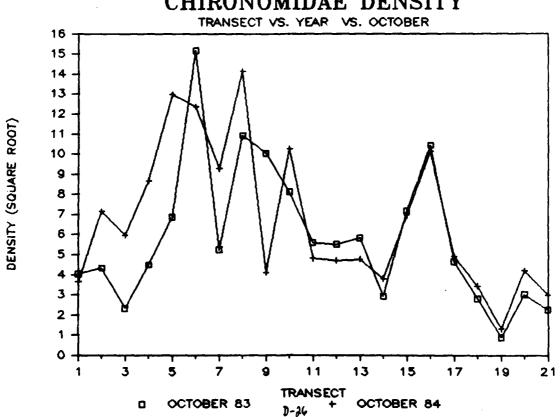


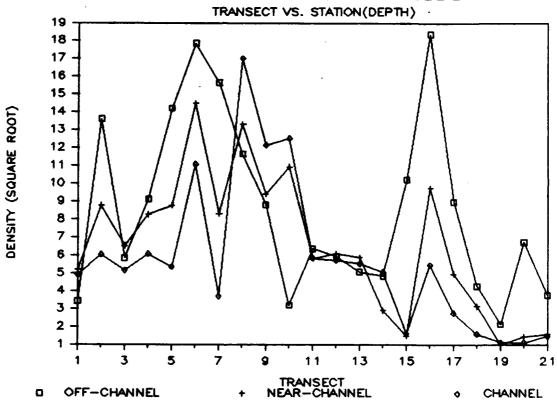
FIG. 38

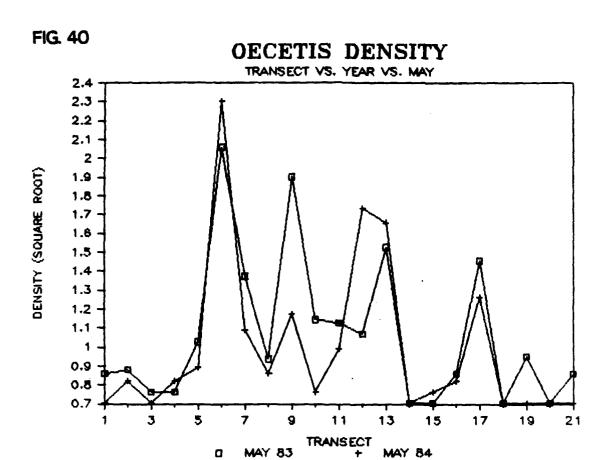
#### CHIRONOMIDAE DENSITY

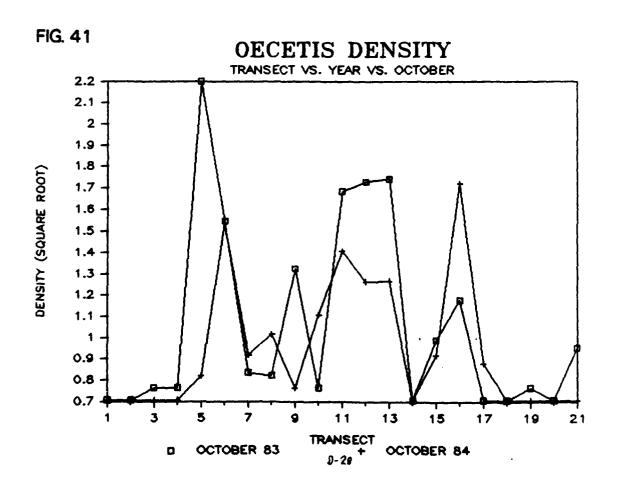


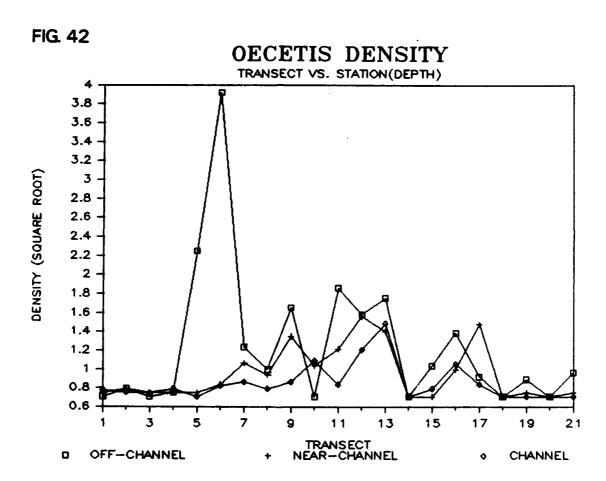
**[** 

# CHIRONOMIDAE DENSITY











## CAENIS DENSITY

TRANSECT VS. YEAR VS. MAY

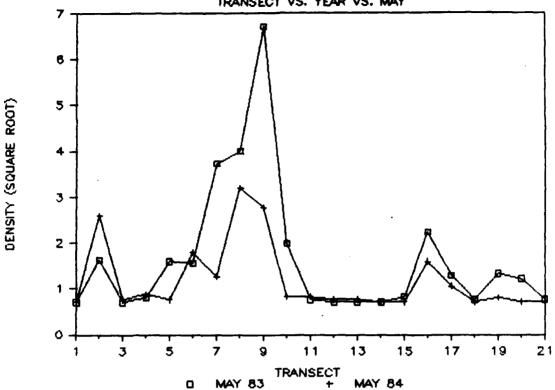
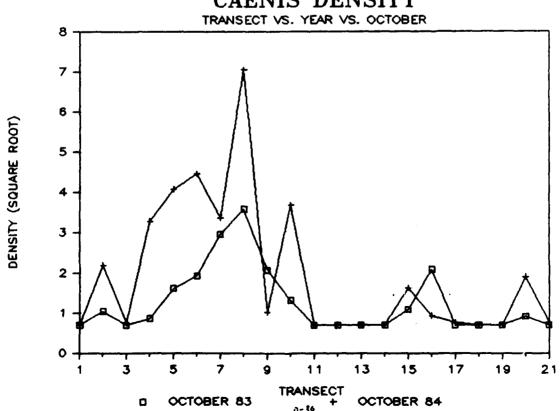
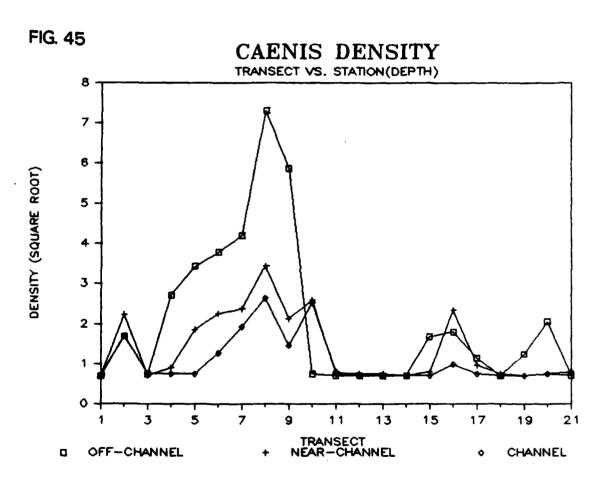


FIG. 44

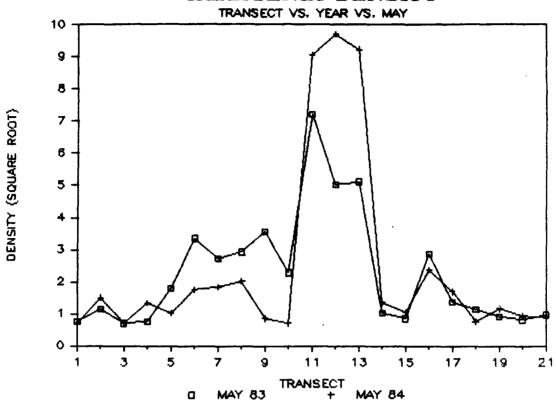
# CAENIS DENSITY





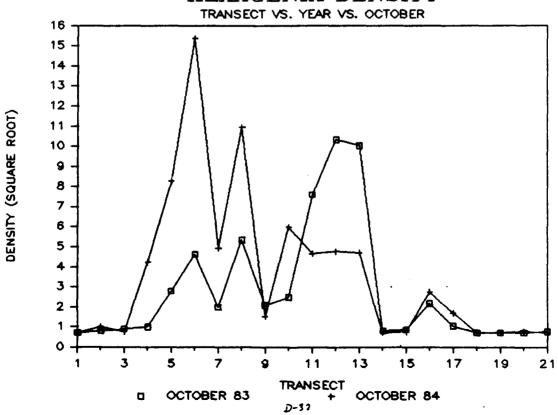


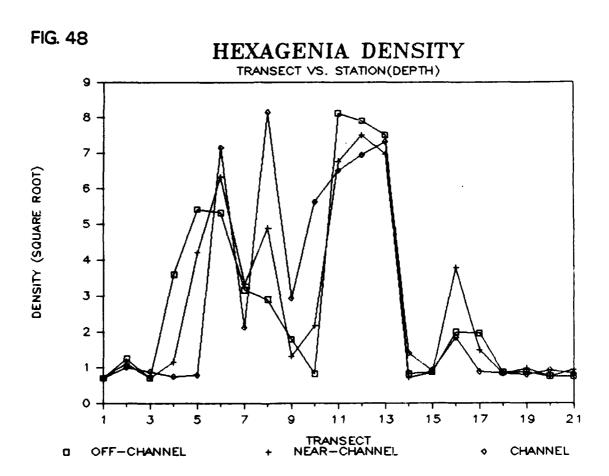
## **HEXAGENIA DENSITY**

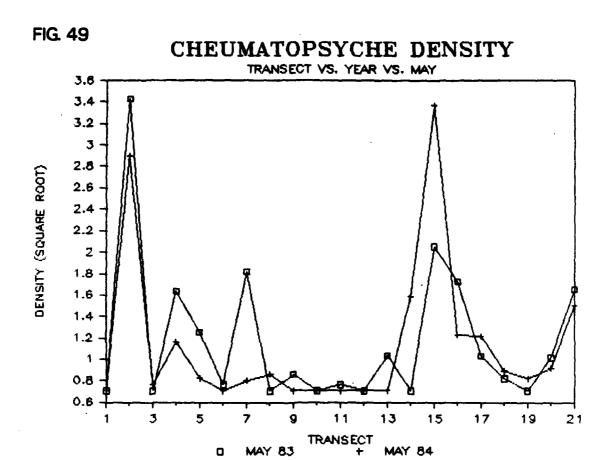




# HEXAGENIA DENSITY







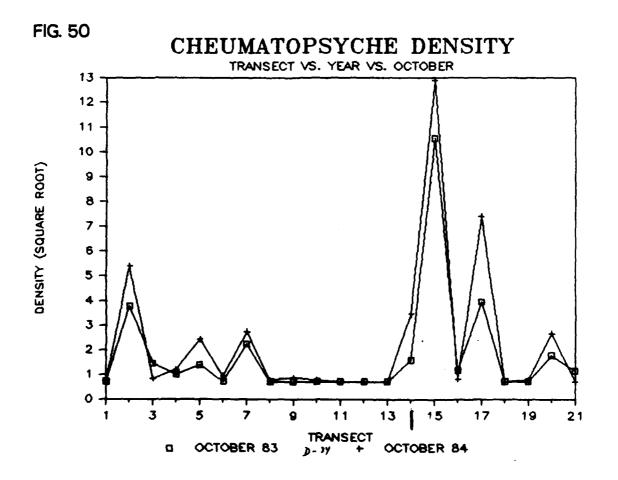
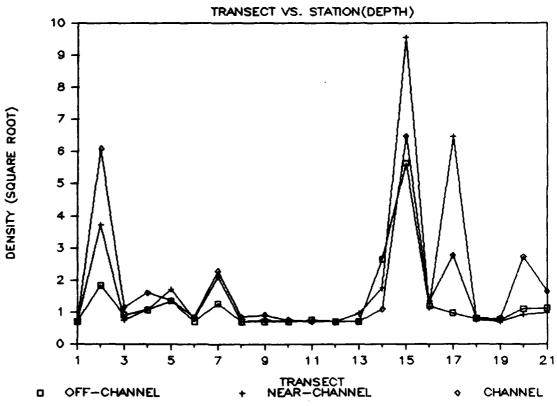


FIG. 51

# CHEUMATOPSYCHE DENSITY





## HYDROPSYCHE DENSITY

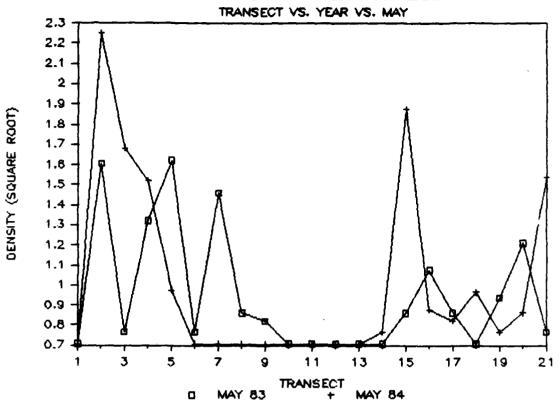
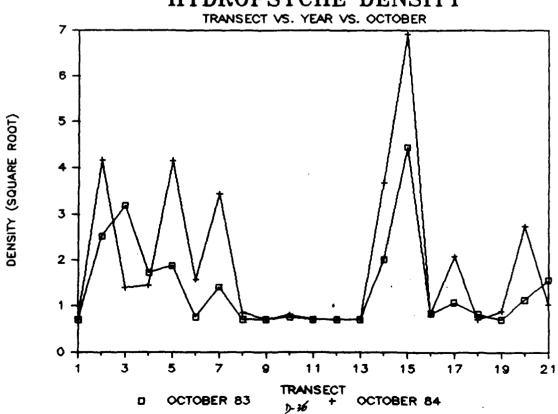
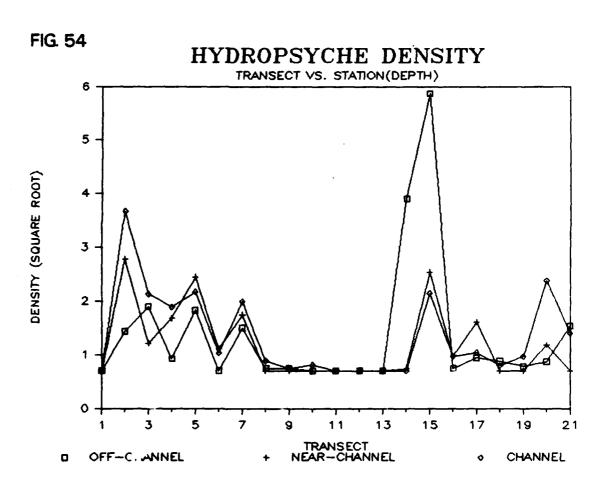


FIG. 53

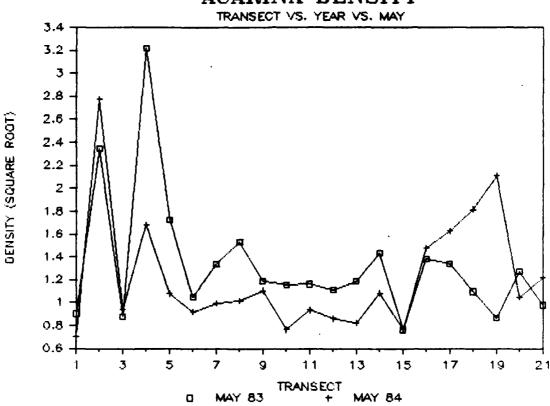
## HYDROPSYCHE DENSITY







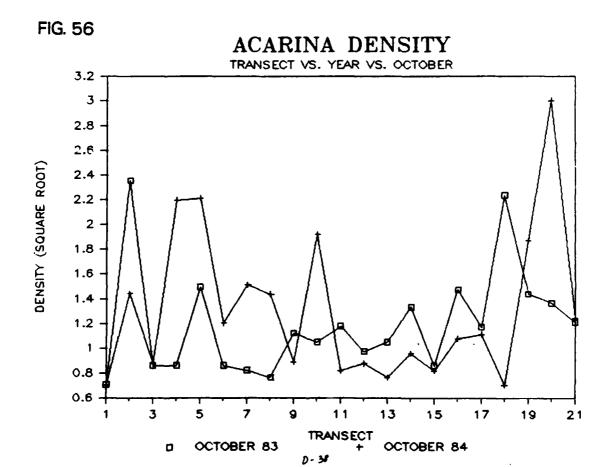
## ACARINA DENSITY

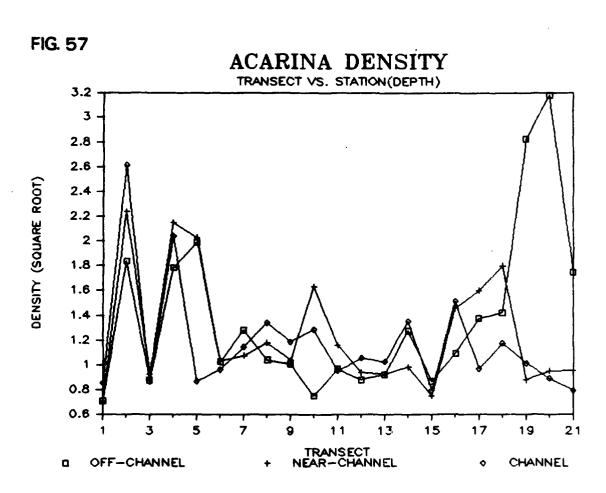


**MAY 83** 

0

MAY 84





(



#### SPHAERIIDAE DENSITY

TRANSECT VS. YEAR VS. MAY

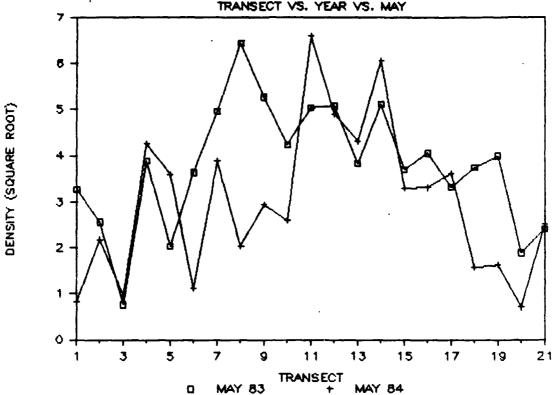
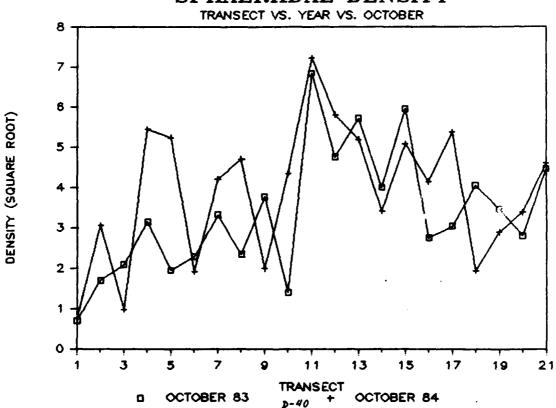
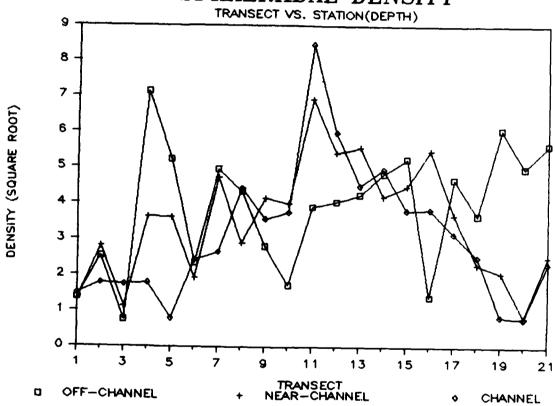


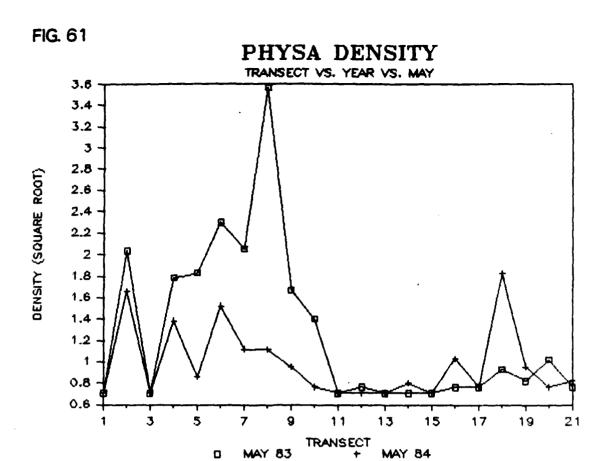
FIG. 59

## SPHAERIIDAE DENSITY



# SPHAERIIDAE DENSITY





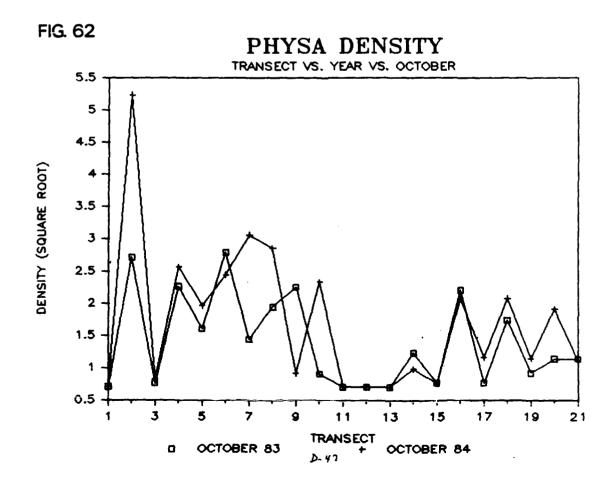
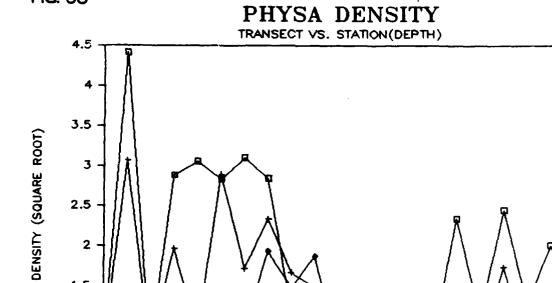


FIG. 63

1.5

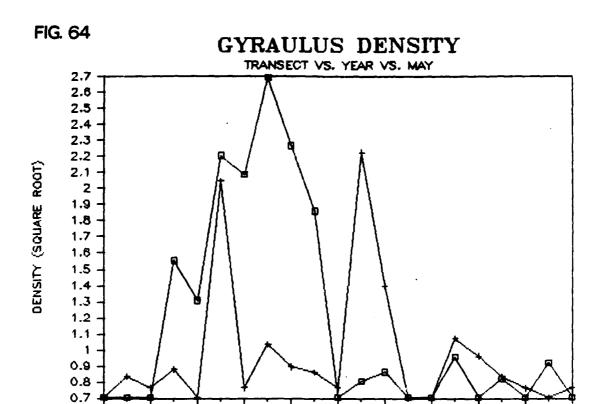
0.5

OFF-CHANNEL



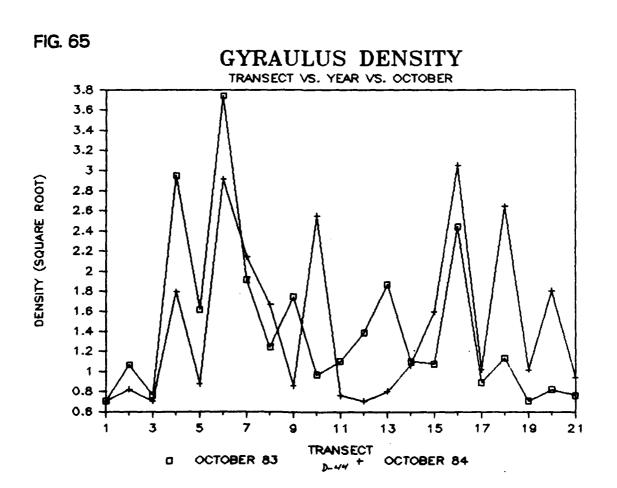
TRANSECT NEAR-CHANNEL

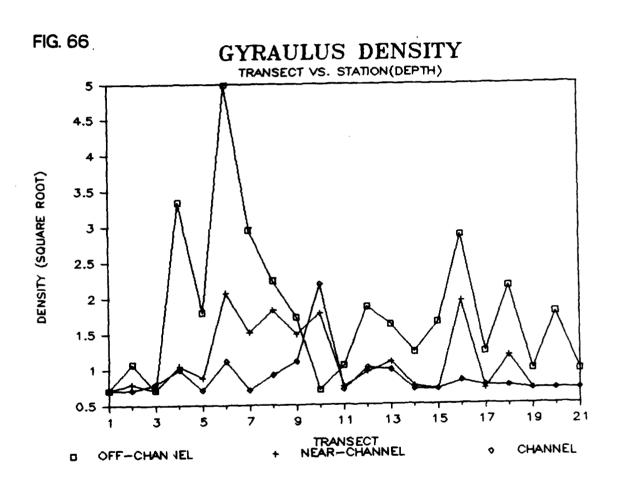
CHANNEL



MAY 83

TRANSECT MAY 84







## AMNICOLA DENSITY

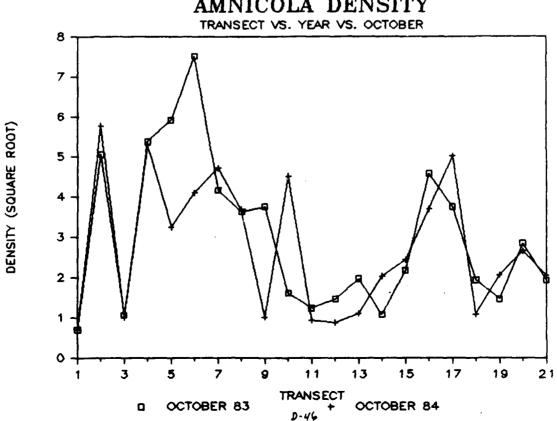
TRANSECT VS. YEAR VS. MAY DENSITY (SQUARE ROOT) TRANSECT +

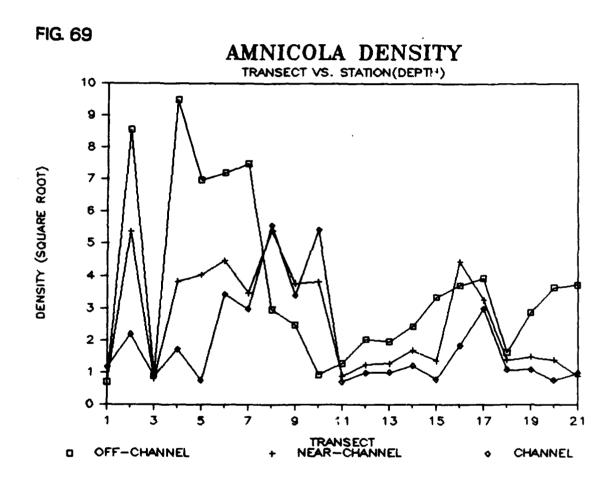
MAY 83

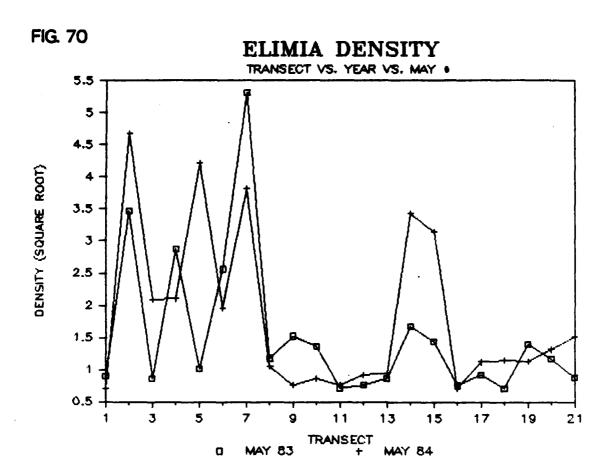


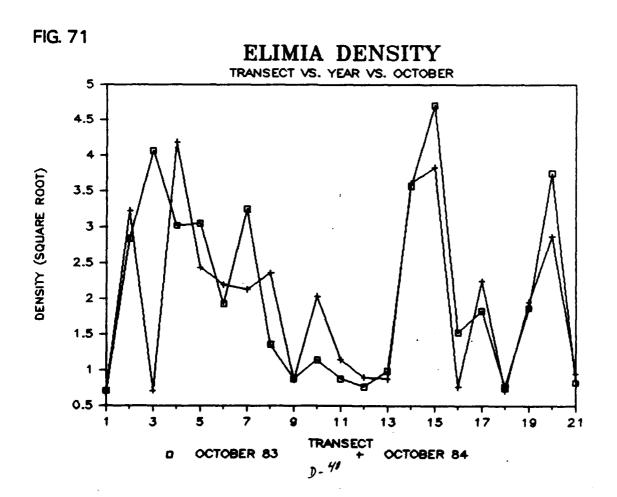
## AMNICOLA DENSITY

MAY 84

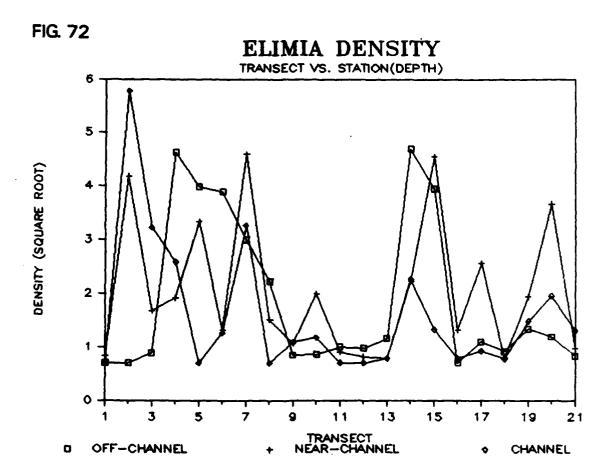








(





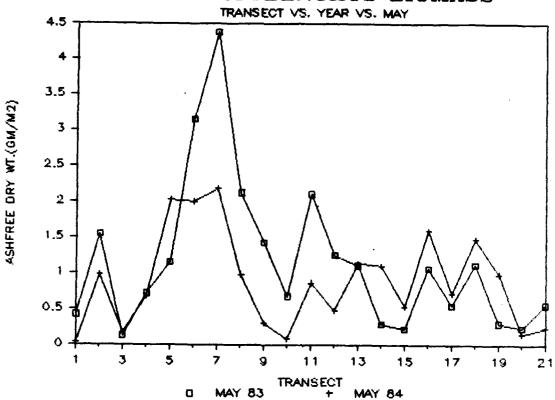
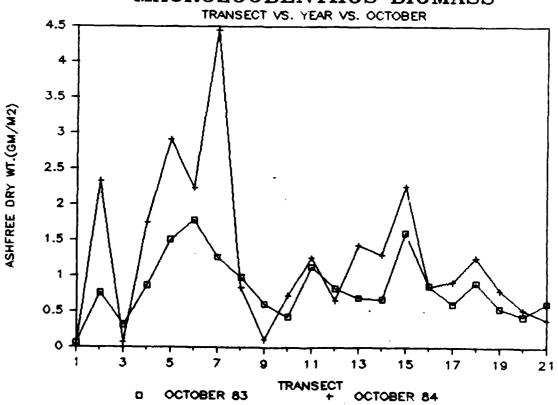
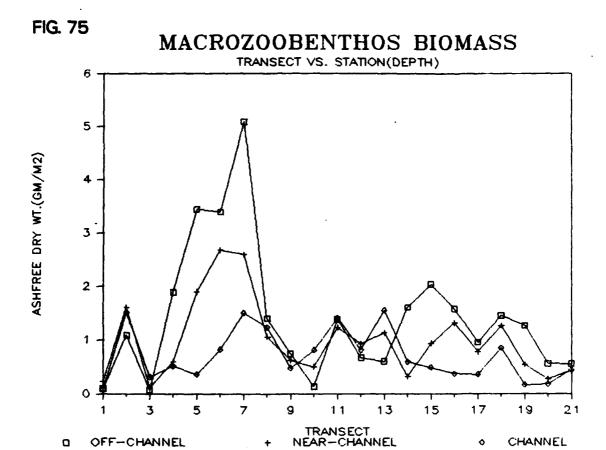


FIG. 74

## MACROZOOBENTHOS BIOMASS





## APPENDIX E

Macrozoobenthos Ponar Grab Biomass Data

| MACROZOOBENTHOS PONAR GRAB | PUNAK GKAB      | DIOMASS DAIA-1983 | - WIW          | •      |              | MCAN ASH CDE |
|----------------------------|-----------------|-------------------|----------------|--------|--------------|--------------|
| LOCATION                   | TRANSECT<br>NO. | STATION<br>NO.    | GRAB<br>REP. 1 | PHO.   | M)<br>REP. 3 | WEIG         |
| ST. CLAIR RIVER            | -               |                   | 0.0065         |        | 0.0031       | 0.2507       |
|                            |                 | 2                 | 0.0274         | 0.0259 | 0.0601       | 0.7809       |
|                            |                 | 6                 | 0.0048         | 0.0082 | 0.0211       | 0.2348       |
|                            | 2               | -                 |                | 0.0553 | 0.0636       | 1.5323       |
|                            |                 | 7                 | 1 :            | =      | 0.0386       | 1.7155       |
|                            |                 | 9                 | 0.0552         |        | 0.0818       | 1.3884       |
|                            | 6               | -                 |                |        | ō            |              |
|                            |                 | 2                 | 1 -            | 0      |              |              |
| •                          |                 |                   | 0.0020         | 1 -    |              | Ö            |
|                            | 4               | -                 | 0.0335         |        | 0.0533       | 1.4053       |
|                            |                 |                   | 0.0250         | 0.0317 | 0.0130       | 1 .          |
|                            |                 | 6                 | 0.0113         | 0.0091 |              |              |
|                            | ស               | -                 | 0.1672         | ı      | ı            | 2.3752       |
|                            |                 | 2                 | 1 -            | i -    | 1 7          |              |
| •                          |                 |                   | 8              | ı ·    | ı _•         | 0            |
|                            | 9               | -                 | 0.0645         |        | ١ ٠          | 1.2444       |
|                            |                 | 7                 | ٠.             | Ι      | .731         | 7.           |
|                            |                 | 6                 | 0.0663         |        | 0.0205       | 0.6522       |
|                            | 7               | -                 | 0.3510         | 0.2050 | 0.6299       | 8.1669       |
|                            |                 | 2                 |                | 0.2232 | 0.1609       | 4.6010       |
|                            |                 | 6                 | 0.0270         | 0      | 0.0150       | 0.3609       |
|                            | 60              | -                 | 0.1889         | 0.1719 | 0.0237       | 2.6478       |
|                            |                 | 7                 | 0.0            | 0.0848 | 0.1248       | 1.7244       |
|                            |                 | C                 | 0.1231         | 0.0570 | 0.1117       | 2.0096       |

| MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 | PONAR GRAB                              | BIOMASS        | DATA-198       | 33 MAY                        |               |  |
|--|---|----------------|----------------|-------------------------------|---------------|--|
| LOCATION                                     | TRANSECT STATION<br>NO. NO. R           | STATION<br>NO. | GRAB<br>REP. 1 | GRAB WEIGHT (GM)              | IM)<br>REP. 3 | MEAN ASH FRE<br>GRAB WEIGHT(GM) DRY WEIGHT<br>REP. 1 REP. 2 REP. 3 (G/SQ. METER) |
| ST. CLAIR RIVER                              |   | -              | 0.0718         | 0.0718 0.1365 0.0967 2.1004   | 0.0967        | 0.0718 0.1365 0.0967 2.1004  |
|  |   | 7              | 0.0915         | 0.0915 0.0345 0.0871 1.4675   | 0.0871        | 1.4675   |
|  | 1 | , ,            | 0.0423         | 0.0423 0.0239 0.0363 0.7059   | 0.0363        | 0.0423 0.0239 0.0363 0.7059  |
|  | 0                                       |                | 0.0034         | 0.0034 0.0041 0.0206 0.1935   | 0.0206        | 0.1935   |
|  |   | 7              | 0.0471         | 2 0.0471 0.0291 0.0845 1.1067 | 0.0845        | 0.0471 0.0291 0.0845 1.1067  |
|  | ,                                       | e              | 0.0705         | 0.0705 0.0124 0.0222 0.7238   | 0.0222        | 0.7238   |

| ACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 | PONAR GRAI      | <b>BIOMASS</b>  | <b>DATA-198</b> | 3 MAY                       |              |   |
|---|-----------------|---|-----------------|-----------------------------|--------------|---|
| LOCATION                                    | TRANSECT<br>NO. | TRANSECT STATION GRAB WEIGHT(GM)<br>NO. NO. REP. 1 REP. 2 R | GRAB<br>REP. 1  | WEIGHT (G                   | M)<br>REP. 3 | MEAN ASH FREE<br>GRAB WEIGHT(GM) DRY WEIGHT<br>REP. 1 REP. 2 REP. 3 (G/SQ. METER) |
| LAKE ST. CLAIR                              |                 | -   | 0.0705          | 0.0705 0.0709 0.2015 2.3614 | 0.2015       | 2.3614  |
|   |                 | 2   | •               | 0.0862 0.1169 0.1003 2.0894 | 0.1003       | 2.0894  |
|   |                 | 9   | 1               | 0.1002 0.0563 0.1166 1.8807 | 0.1166       | 1.8807  |
|   | 12              | · · · · · · · · · · · · · · · · · · ·                       | 1               | 0.0478 0.0828 0.0382 1.1625 | 0.0382       | 1. 1625   |
|   |                 | 2   |                 | 0.0611 0.0575 0.0517 1.1728 | 0.0517       | 1.1728  |
|   |                 | 6   | 0.0573          | 0.0573 0.0795 0.0716 1.4352 | 0.0716       | 1.4352  |
|   | 13              | -   | ı               | 0.0264 0.0448 0.0234 0.6515 | 0.0234       | 0.6515  |
|   |                 | 2   |                 | 0.0476 0.0586 0.0383 0.9951 | 0.0383       | 0.9951  |
|   |                 | ,<br>,<br>,   | 0.1115          | 0.1115 0.0352 0.0980 1.6852 | 0.0980       | 1.6852  |

(

| MACRGZ00BENTHOS | PONAR GRAB      | BIOMASS        | DATA-1983      | 3 MAY    |               |                             |
|-----------------|-----------------|----------------|----------------|----------|---------------|-----------------------------|
| LOCATION        | TRANSECT<br>NO. | STATION<br>NO. | GRAB<br>REP. 1 | <b>₩</b> | IM)<br>REP. 3 | DRY WEIGHT<br>(G/SQ. METER) |
| DETROIT RIVER   | 14              | -              | 1 -            | 0.0256   | 0.0081        | ļ 6.                        |
|                 |                 | 2              |                | 0.0222   | 0.0125        | 0.2761                      |
|                 |                 |                |                | 0.0097   | 9600.0        | 1 0                         |
|                 | 15              |                | 1              | 0.0134   | 0.0237        | 0.2934                      |
|                 |                 | 2              |                |          |               | 190                         |
|                 |                 | 3              |                |          | 0.0058        | 0.1859                      |
|                 | 16              | ŀ              | 8              | 1 -      | t ·           | 1.6473                      |
|                 |                 | 2              | ı -            |          | 0             |                             |
|                 |                 | 9              | 0.0247         | 0.0297   | 0.0196        | 0.5096                      |
|                 | 17              |                | 047            | t        | 98            | O                           |
|                 |                 | 7              | 0.0105         | ı -      |               | 0.5268                      |
|                 |                 | 3              | 1 2            |          |               |                             |
|                 | 60              |                | 9              | 1 -      | 80            | 1.3078                      |
|                 |                 | 2              | 9              | 0.1533   | •             | 1.6521                      |
| •               |                 |                |                | 0.0177   |               | 4                           |
|                 | 64              | -              | 0.0160         | 0.0127   |               |                             |
|                 |                 | 7              | 0.0122         | 0.0038   | 0.0189        | . 4                         |
|                 |                 | 3              | 6              | 1 🦠      | 0.0023        | . 224                       |
|                 | 50              | -              | 0.0077         | 0.0220   | .050          | 0.5503                      |
|                 |                 | 2              | 0.0055         | 0.0016   | 0.0034        | 0.0723                      |
|                 |                 | 6              | 0.0025         | 0.0022   | 0.0085        | 0.0909                      |
|                 | 21              | -              | 0.0074         | • • •    | 0.0200        | 0.3031                      |
|                 |                 | 2              | 0.0026         | 0.0071   |               |                             |
|                 |                 |                | 0.1426         | ٠.       | 0.0014        | 1.0282                      |

| MACROZOOBENTHOS PONAR GRAB | ONAR GRAB       | BIDMASS DATA-1983 | DATA- 198      | 13 OCTOBER | 8 8          | į                           |
|----------------------------|-----------------|-------------------|----------------|------------|--------------|-----------------------------|
| LOCATION                   | TRANSECT<br>NO. | STATION<br>NO.    | GRAB<br>REP. 1 | WEIGHT (GM | M)<br>REP. 3 | DRY WEIGHT<br>(G/SQ. METER) |
| ST. CLAIR RIVER            | -               | -                 | 0.0072         | 0.0041     | 0.0003       | 0.0799                      |
|                            |                 | 7                 | 0.0022         | 0.0027     | 0.0029       | 0.0537                      |
|                            |                 | е                 | 0.0023         | 0.0020     | 0.0024       | 0.0461                      |
|                            | 8               | -                 | 0.0131         | 0.0217     | 0.0246       | 0.4091                      |
|                            |                 | 7                 |                | 0.0110     | 0.0519       | 1.1838                      |
|                            |                 | 6                 | 0.0411         | 0.0426     | 0.0188       | 0.7059                      |
|                            | 6               | -                 | 0.0016         | 0.0030     | 0.0022       | 0.0468                      |
|                            |                 | 7                 | 0.0116         | 0.0059     | 0.0089       | 0.1818                      |
|                            |                 | 6                 | 0.0111         | 0.0599     | 0.0325       | 0.7128                      |
|                            | 4               | -                 | 0.1158         | 0.1829     | 0.0319       | 2.2767                      |
|                            |                 | 2                 | 0.0041         | 0.0051     | 0.0146       | 0.1639                      |
|                            |                 | 6                 | 0.0026         | 0.0106     | 0.0101       | 0.1605                      |
|                            | 1 107           | -                 | 0.0309         | 0.2114     | 0.2334       | 3.2759                      |
|                            |                 | 2                 | 0.0427         | 0.0518     | 0.0686       | 1. 1232                     |
|                            |                 | 6                 | 1 -            | 0.0014     | 0.0166       | 0.1412                      |
|                            | 9               |                   | 0.2308         | 0.1909     | 0.0753       | 3.4227                      |
|                            |                 | 7                 | ı - T-         | 0.0604     | 0.0570       | 1.3966                      |
|                            |                 | 6                 | 0.0221         | 0.0135     | 0.0451       | 0.5557                      |
|                            | 7               | -                 | 0.0339         | 0.0143     | 0.0094       | 0.3967                      |
|                            |                 | 8                 | 0.1266         | 0.2583     | 0.0440       | 2.9536                      |
|                            |                 | n                 | 0.0288         | 0.0290     | 0.0091       | 0.4607                      |
|                            | <b>60</b>       | -                 | 0.0230         | 0.1357     | 0.0182       | 1.2182                      |
|                            |                 | 8                 | 0.0591         | 0.0548     | 0.0477       | 1.1129                      |
|                            |                 | 6                 | 0.0606         | 0.0135     | 0.0191       | 0.6418                      |

| LOCATION GRAB WEIGHT (GM)                                     | MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 | PONAR GRAB      | BIOMASS        | DATA-198       | 3 OCTOBER  | BER       | MFAN ASH FREE |
|---|--|-----------------|----------------|----------------|------------|-----------|---------------|
| 9 1 0.0028<br>2 0.0454<br>3 0.0553<br>10 1 0.0130<br>2 0.0260 | CCATION                                      | TRANSECT<br>NO. | STATION<br>NO. | GRAB<br>REP. 1 | WEIGHT (G) | M) REP. 3 | DRY WEIGHT    |
| 3 0.0553<br>1 0.0130<br>2 0.0260<br>3 0.0252                  | ST. CLAIR RIVER                              | •               | 1              | 0.0028         | 0.0020     | 0.0019    | 0.0461        |
| 3 0.0553<br>1 0.0130<br>2 0.0260<br>3 0.0252                  |  |                 |                | 0.0454         | 0.0394     | 0.0515    | 0.9387        |
| 2 0.0260<br>3 0.0252  |  |                 |                | 0.0553         | 0.0145     | 0.0563    | 0.8684        |
| 0.0260  |  | 10              |                | 0.0130         | 0.0261     | 0.0020    | 0.2830        |
| 0.0252  |  |                 | 2              |                | 0.0043     | 0.0033    | 0.2314        |
|   |  |                 | 6              | 0.0252         | 0.0684     | 0.0207    | 0.7872        |

| MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 | PONAR GRAE | BIOMASS          | <b>DATA-198</b> | 13 OCTOBER                  | BER                         |        |                             |
|--|------------|------------------|-----------------|-----------------------------|-----------------------------|--------|-----------------------------|
|  | TRANSECT   | TRANSECT STATION | GRAB            | 2                           | <b>a</b>                    | MEAN   | MEAN ASH FREE<br>DRY WEIGHT |
| LOCATION                                     | 9          | ₹                | 2               |                             | REP. 2 REP. 3 (G/SQ. METER) | (6/80. | METER)                      |
| LAKE ST. CLAIR                               | =          | -                | 0.0868          | 0.0868 0.0607 0.0511 1.3677 | 0.0511                      | 1.367  | 1                           |
|  |            | 8                | 0.0600          | 0.0600 0.0287 0.0283 0.8057 | 0.0283                      | 0.805  |                             |
|  |            | c                | 0. 1090         | 0.1090 0.0360 0.0363 1.2486 | 0.0363                      | 1.248  | 10                          |
|  | 12         | -                | 0.0214          | 0.0214 0.0365 0.0284 0.5943 | 0.0284                      | 0.594  | 8                           |
|  |            | 7                | 0.0663          |                             | 0.0717 0.0341 1.1852        | 1.185  |                             |
|  |            | n                | 0.0562          | 0.0562 0.0145 0.0339 0.7203 | 0.0339                      | 0.720  |                             |
|  | 13         | -                | 0.0169          | 0.0169 0.0229 0.0487 0.6095 | 0.0487                      | 0.6095 | 10                          |
|  |            | 2                | 0.0556          | 0.0556 0.0424 0.0309 0.8877 | 0.0309                      | 0.887  |                             |
|  |            | ED.              | 0.0253          | 0.0253 0.0333 0.0294 0.6060 | 0.0294                      | 0.606  |                             |

1

D-59

| MACROZOOBENTHOS | PONAR GRAB            | BIOMASS                    | DATA-1983 | 3 OCTOBER    | BER          |  |
|-----------------|-----------------------|----------------------------|-----------|--------------|--------------|--|
| LOCATION        | TRANSECT<br>NO.       | STATION<br>NO.             | . B       | W            | M)<br>REP. 3 | MEAN ASH FREE<br>DRY WEIGHT<br>(G/SQ. METER) |
| DETROIT RIVER   | 14                    | ·<br>·<br>·<br>·<br>·<br>· |           |              | 0.0809       | 1.7396                                       |
|                 |                       | 2                          | 0.0033    | 1 .          | 0.0023       | 0.0530                                       |
|                 |                       | 6                          | 0.0103    |              | 0.0125       | 0.2362                                       |
|                 | £                     | -                          |           |              | 0.0897       | 3.2085                                       |
|                 |                       | 2                          |           |              |              | 1.4186                                       |
|                 |                       | 6                          | 9         | t • :        | 0.0068       | 0.2039                                       |
|                 | <b>16</b>             | -                          |           | 0.0323       | i            | 1.0798                                       |
|                 |                       | 2                          | 9         | .018         |              | 1. 1225                                      |
|                 |                       | 6                          | 1         |              | 0.0224       | 0.3981                                       |
|                 | 17                    | <br>                       |           |              |              | 0.6460                                       |
|                 |                       | 7                          |           |              |              | 60   |
|                 |                       |                            | 0.0126    | 0.0169       | 0.0243       | 0.3705                                       |
|                 | 18                    | -                          | 0.0603    | 0.0408       | 0.0253       | 0.8705                                       |
|                 |                       | 7                          |           | 0.0828       | 0.0770       | 1.4378                                       |
|                 |                       | е                          | 0.0303    | 0.0187       | 0.0285       | 0.5338                                       |
|                 | 19                    | +                          | ı - ı     | <b>1</b> - 1 | 0.0339       | 0.3895                                       |
|                 |                       | 7                          | 860       |              |              | 1.2286                                       |
|                 |                       | 6                          | ı 📑       | 1 .          | 0.0007       |  |
|                 | 20                    | -                          | • •       | 0.0198       |              | 0.4408                                       |
|                 |                       | 2                          | 0         |              | 0.0207       |  |
|                 |                       | e                          |           |              | 0.0207       | 0.2004                                       |
|                 | 21                    | -                          |           | 0.0410       |              | 0.9186                                       |
|                 |                       | 7                          |           | 0.0166       | 0.0165       | 4  |
|                 | )<br>;<br>;<br>;<br>; | 6                          | 0.0193    | 0.0347       | 0.0196       | 0.5068                                       |

| MAY            |
|----------------|
| DATA-1984      |
| BIOMASS        |
| GRAB           |
| PONAR          |
| ACROZOOBENTHDS |

| STANSECT   STATION   GRAB WEIGHT (GAM)   DRY WEIGHT   |         |     |     |              |           |        | MEAN ASH FRE |
|---|---------|-----|-----|--------------|-----------|--------|--------------|
| 2 0.0013 0.0014 0.0014 0.0014 0.0014 0.0014 0.0019 0.0014 0.0019 0.0014 0.0019 0.0011 0.0019 0.0011 0.0019 0.0011 0.0019 0.0011 | OCATION | NO. | NO. | GRAB<br>RE 1 | WEIGHT (G | REP.   | <b>=</b> _   |
| 2 0.0012 0.0013 0.0017 3 0.0015 0.0014 0.0019 1 0.0568 0.0695 0.0215 2 0.0645 0.1001 0.0451 3 0.0150 0.0350 0.0182 1 0.0157 0.0014 0.0021 2 0.0016 0.0017 0.0162 2 0.0330 0.0274 0.0357 3 0.0222 0.0101 0.0461 1 0.1658 0.1989 0.1244 2 0.0372 0.1618 0.1908 3 0.0021 0.0016 0.0015 1 0.2447 0.4382 0.1552 2 0.0079 0.0074 0.0100 3 0.0041 0.0040 0.0017 1 0.0747 0.0880 0.0406 2 0.0083 0.1453 0.0944 3 0.0630 0.2072 0.2087 2 0.0381 0.0097 0.0216  | ,       | -   | -   | 0.0013       | 0.0015    | 0.0014 | 0.0289       |
| 3 0.0015 0.0014 0.0019 1 0.0568 0.0695 0.0215 2 0.0645 0.1001 0.0451 3 0.0150 0.0350 0.0182 2 0.0016 0.0024 0.0016 3 0.0414 0.0024 0.0016 2 0.0330 0.0274 0.0357 3 0.0414 0.00274 0.0357 4 0.0458 0.1989 0.1244 5 0.0372 0.0101 0.0461 7 0.0477 0.0880 0.0406 7 0.0747 0.0880 0.0406 7 0.0477 0.0812 0.0024 7 0.0477 0.0812 0.0026 7 0.0381 0.0021 0.00216  |         |     | 7   | 0.0012       | 0.0013    | 0.0017 | 0.0289       |
| 1 0.0568 0.0695 0.0215 2 0.0645 0.1001 0.0451 3 0.0150 0.0350 0.0182 1 0.0010 0.0011 0.0021 2 0.0016 0.0024 0.0016 3 0.0414 0.0042 0.0192 1 0.0157 0.0476 0.0366 3 0.0222 0.0101 0.0461 2 0.0330 0.0274 0.0557 3 0.0222 0.0101 0.0461 1 0.2447 0.4382 0.1582 2 0.0079 0.0016 0.0017 1 0.0747 0.0880 0.0406 2 0.0083 0.1453 0.0944 3 0.0830 0.2072 0.2087 1 0.0477 0.0812 0.0024 2 0.0381 0.0097 0.0216  |         |     |     | 0.0015       | 0.0014    | 0.0019 | 0.0331       |
| 2 0.0645 0.1001 0.0451 3 0.0150 0.0350 0.0182 2 0.0016 0.0024 0.0016 3 0.0414 0.0042 0.0192 2 0.0330 0.0274 0.0356 2 0.0330 0.0274 0.0356 1 0.1558 0.1989 0.1244 2 0.0372 0.1618 0.1908 3 0.0021 0.0016 0.0015 1 0.2447 0.4382 0.1508 2 0.0079 0.0074 0.0100 3 0.0041 0.0040 0.0017 1 0.0747 0.0880 0.0406 2 0.00381 0.0037 0.0216 3 0.0956 0.0742 0.0590   |         | 8   | -   | 0.0568       | 0.0695    | 0.0215 | 1.0178       |
| 3 0.0150 0.0350 0.0182<br>1 0.0016 0.0024 0.0016<br>3 0.0414 0.0042 0.0192<br>1 0.0157 0.0476 0.0366<br>2 0.0330 0.0274 0.0357<br>3 0.0222 0.0101 0.0461<br>2 0.0372 0.1589 0.1244<br>2 0.0372 0.1589 0.1244<br>2 0.0372 0.1518 0.1508<br>3 0.0074 0.0016 0.0017<br>1 0.0747 0.0880 0.0406<br>2 0.0083 0.1453 0.0944<br>3 0.0830 0.2072 0.2087<br>1 0.0477 0.0812 0.0024<br>2 0.0381 0.0031 0.0590  |         |     | 2   | 0.0645       | 0.1001    | 0.0451 | 1.4441       |
| 1 0.0010 0.0011 0.0021<br>2 0.0016 0.0024 0.0016<br>3 0.0414 0.0042 0.0192<br>2 0.0330 0.0274 0.0557<br>3 0.0222 0.0101 0.0461<br>1 0.1658 0.1989 0.1244<br>2 0.0372 0.1618 0.1908<br>3 0.0021 0.0016 0.0015<br>2 0.0372 0.1618 0.1908<br>3 0.0041 0.0016 0.0017<br>1 0.0747 0.0880 0.0406<br>2 0.0083 0.1453 0.0944<br>3 0.0630 0.2072 0.2087<br>1 0.0477 0.0812 0.0024<br>2 0.0381 0.0097 0.0216  |         |     | 6   | 0.0150       | 0.0350    | 0.0182 | 0.4697       |
| 2 0.0016 0.0024 0.0016 3 0.0414 0.0042 0.0192 2 0.0330 0.0274 0.0357 3 0.0222 0.0101 0.0461 2 0.0372 0.1989 0.1244 2 0.0372 0.1618 0.1808 3 0.0021 0.0016 0.0015 1 0.2447 0.4382 0.1282 2 0.0079 0.0074 0.0100 3 0.0041 0.0040 0.0017 1 0.0747 0.0880 0.0406 2 0.0083 0.1453 0.0944 3 0.0830 0.2072 0.2087 1 0.0477 0.0812 0.0024 2 0.0381 0.0097 0.0590  | ·       | 6   | -   | 0.0010       | 0.0011    | 0.0021 | 0.0289       |
| 3 0.0414 0.0042 0.0192 2 0.0330 0.0274 0.0557 3 0.0222 0.0101 0.0461 1 0.1658 0.1989 0.1244 2 0.0372 0.1618 0.1908 3 0.0021 0.0016 0.0015 1 0.2447 0.4382 0.1552 2 0.0079 0.0074 0.0100 3 0.0747 0.0880 0.0406 2 0.0083 0.1453 0.0944 3 0.0830 0.2072 0.2087 1 0.0477 0.0812 0.0024 2 0.09381 0.0097 0.0216   |         |     | 7   | 0.0016       | 0.0024    | 0.0016 | 0.0386       |
| 1 0.0157 0.0476 0.0366 2 0.0330 0.0274 0.0557 3 0.0222 0.0101 0.0461 2 0.0372 0.1618 0.1244 2 0.0372 0.1618 0.1808 3 0.0021 0.0016 0.0015 1 0.2447 0.4382 0.1552 2 0.0079 0.0074 0.0100 3 0.0747 0.0880 0.0406 2 0.0083 0.1453 0.0944 3 0.0630 0.2072 0.2087 1 0.0477 0.0812 0.0024 2 0.0381 0.0097 0.0590  |         |     | 6   | 0.0414       | 0.0042    | 0.0192 | 0.4463       |
| 2 0.0330 0.0274 0.0557<br>3 0.0222 0.0101 0.0461<br>2 0.0372 0.1618 0.1244<br>2 0.0372 0.1618 0.1908<br>3 0.0021 0.0016 0.0015<br>2 0.0079 0.0074 0.0100<br>1 0.0747 0.0880 0.0406<br>2 0.0083 0.1453 0.0944<br>3 0.0830 0.2072 0.2087<br>1 0.0477 0.0812 0.0024<br>2 0.0381 0.0097 0.0590  |         | 4   | -   | 0.0157       | 0.0476    | 0.0366 | 0.6880       |
| 3 0.0222 0.0101 0.0461 2 0.0372 0.1618 0.1244 2 0.0372 0.1618 0.1908 3 0.0021 0.0016 0.0015 2 0.0079 0.0074 0.0100 3 0.0041 0.0040 0.0017 1 0.0747 0.0880 0.0406 2 0.0083 0.1453 0.0944 3 0.0630 0.2072 0.2067 1 0.0477 0.0812 0.0024 2 0.0381 0.0097 0.0216  |         |     | 8   | 0.0330       | 0.0274    | 0.0557 | 0.7995       |
| 1 0.1658 0.1989 0.1244 3 2 0.0372 0.1618 0.1908 2 3 0.0021 0.0016 0.0015 0 2 0.0079 0.0074 0.0100 0 3 0.0041 0.0040 0.0017 0 1 0.0747 0.0880 0.0406 1 2 0.083 0.1453 0.0944 1 3 0.0830 0.2072 0.2087 3 2 0.0381 0.0097 0.0216 0 3 0.0956 0.0742 0.0590 1  |         | 1   | 6   | 0.0222       | 0.0101    | 0.0461 | 0.5400       |
| 2 0.0372 0.1618 0.1808 2 3 0.0021 0.0016 0.0015 0 2 0.0079 0.0074 0.0100 0 3 0.0041 0.0040 0.0017 0 1 0.0747 0.0880 0.0406 1 2 0.0083 0.1453 0.0944 1 2 0.0830 0.2072 0.2087 3 2 0.0831 0.00812 0.0024 0 3 0.0956 0.0742 0.0590 1   |         | es. | -   | 0.1658       | 0. 1989   | 0.1244 | 3.3683       |
| 3 0.0021 0.0016 0.0015 0 2 0.0079 0.0074 0.0100 0 3 0.0041 0.0040 0.0017 0 1 0.0747 0.0880 0.0406 1 2 0.0083 0.1453 0.0944 1 3 0.0830 0.2072 0.2087 3 1 0.0477 0.0812 0.0024 0 2 0.0381 0.0097 0.0216 0   |         |     | 2   | 0.0372       | 0.1618    | 0.1908 | 2.6844       |
| 1 0.2447 0.4382 0.1552 5<br>2 0.0079 0.0074 0.0100 0<br>3 0.0041 0.0040 0.0017 0<br>1 0.0747 0.0880 0.0406 1<br>2 0.0083 0.1453 0.0944 1<br>3 0.0630 0.2072 0.2087 3<br>1 0.0477 0.0812 0.0024 0<br>2 0.0381 0.0097 0.0216 0  |         | ,   | 6   | 0.0021       | 0.0016    | 0.0015 | 0.0358       |
| 2 0.0078 0.0074 0.0100 0 3 0.0041 0.0040 0.0017 0 1 0.0747 0.0880 0.0406 1 2 0.0083 0.1453 0.0944 1 3 0.0830 0.2072 0.2087 3 1 0.0477 0.0812 0.0024 0 2 0.0381 0.0097 0.0216 0  |         | 9   | -   | 0.2447       | 0.4382    | 0.1552 | 5.7717       |
| 3 0.0041 0.0040 0.0017 0 1 0.0747 0.0880 0.0406 1 2 0.0083 0.1453 0.0944 1 3 0.0830 0.2072 0.2087 3 1 0.0477 0.0812 0.0024 0 2 0.0381 0.0097 0.0216 0 3 0.0956 0.0742 0.0590 1  |         |     | 2   | 0.0079       | 0.0074    | 0.0100 | 0.1742       |
| 1 0.0747 0.0880 0.0406 1<br>2 0.0083 0.1453 0.0944 1<br>3 0.0830 0.2072 0.2087 3<br>1 0.0477 0.0812 0.0024 0<br>2 0.0381 0.0097 0.0216 0<br>3 0.0956 0.0742 0.0590 1  |         |     | 6   | 0.0041       | 0.0040    | 0.0017 | 0.0675       |
| 2 0.0083 0.1453 0.0944 1<br>3 0.0830 0.2072 0.2087 3<br>1 0.0477 0.0812 0.0024 0<br>2 0.0381 0.0097 0.0216 0<br>3 0.0956 0.0742 0.0590 1  |         | 7   | -   | 0.0747       | 0.0880    | 0.0406 | 1.4001       |
| 3 0.0830 0.2072 0.2087 3<br>1 0.0477 0.0812 0.0024 0<br>2 0.0381 0.0097 0.0216 0<br>3 0.0956 0.0742 0.0590 1  |         |     | 7   | 0.0083       |           | 0.0944 | 1.7079       |
| 1 0.0477 0.0812 0.0024 0<br>2 0.0381 0.0097 0.0216 0<br>3 0.0956 0.0742 0.0590 1  |         | ,   | က   | 0.0830       | 0.2072    | 0.2087 |              |
| 0.0742 0.0590 1   |         | 60  | -   | 0.0477       | 0.0812    | 0.0024 | 0.9041       |
| 0.0742 0.0590 1.  |         |     | 7   | 0.0381       | 0.0097    | 0.0216 | 0.4780       |
|   |         |     | 6   | 0.0956       | 0.0742    | 0.0590 | 1.5758       |

| MACROZOGBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY | PONAR GRAB                        | BIOMASS                       | DATA- 198                     | 4 MAY                       |              | A NAME AND A SECOND   |
|--|-----------------------------------|-------------------------------|-------------------------------|-----------------------------|--------------|---|
| LOCATION   | TRANSECT STATION GRAB WEIGHT (GM) | STATION<br>NO.                | GRAB<br>REP. 1                | WEIGHT (G)<br>REP. 2        | M)<br>REP. 3 | GRAB WEIGHT (GM) DRY WEIGHT<br>REP. 1 REP. 2 REP. 3 (G/SO. METER) |
| ST. CLAIR RIVER                                  | 6                                 | -                             | 1 0.0407 0.0427 0.0277 0.7651 | 0.0427                      | 0.0277       | 1 0.0407 0.0427 0.0277 0.7651                                     |
|  |                                   | 2                             | 0.0039                        | 0.0039 0.0023 0.0029 0.0627 | 0.0029       | 2 0.0039 0.0023 0.0029 0.0627                                     |
|  |                                   | e .                           | 0.0095                        | 0.0095 0.0009 0.0019 0.0847 | 0.0019       | 3 0.0095 0.0009 0.0019 0.0847                                     |
|  | 10                                | 1 0.0011 0.0009 0.0012 0.0220 | 0.0011                        | 0.0011 0.0009 0.0012 0.0220 | 0.0012       | 0.0220  |
|  |                                   | 7                             | 0.0038                        | 0.0038 0.0036 0.0144 0.1501 | 0.0144       | 2 0.0038 0.0036 0.0144 0.1501                                     |
|  |                                   |                               | 0.0050                        | 0.0050 0.0034 0.0011 0.0654 | 0.0011       | 3 0.0050 0.0034 0.0011 0.0654                                     |

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY

| LOCATION       |      | TRANSECT STATION GRAB WEIGHT(GM) NO. NO. REP. 1 REP. 2 RE | STATION<br>NO. | GRAB<br>REP. 1 | WEIGHT (G                   | REP. 3 | MEAN ASH FREE<br>GRAB WEIGHT(GM) ORY WEIGHT<br>REP. 1 REP. 2 REP. 3 (G/SQ. METER) |
|----------------|------|---|----------------|----------------|-----------------------------|--------|---|
| LAKE ST. CLAIR | LAIR |   | -              | 0.0276         | 0.0276 0.0480 0.0503 0.8670 | 0.0503 | 0.8670  |
|                |      |   | 2              | 0.0329         | 0.0329 0.0480 0.0321 0.7782 | 0.0321 | 0.7782  |
|                |      |   | C              | 0.0488         | 0.0488 0.0565 0.0336 0.9566 | 0.0336 | 0.0565 0.0336 0.9566  |
|                |      | 2   | -              | 0.0168         | 0.0168 0.0208 0.0278 0.4504 | 0.0278 | 0.4504  |
|                |      |   | 2              | 0.0210         | 0.0210 0.0293 0.0378 0.6067 | 0.0378 | 0.6067  |
|                |      | ,   | 6              | 0.0180         | 0.0180 0.0211 0.0143 0.3677 | 0.0143 | 0.3677  |
|                |      | 13  | -              | 0.0125         | 0.0125 0.0779 0.0499 0.9662 | 0.0499 | 0.9662  |
|                |      |   | 2              | 0.0764         | 0.0764 0.0635 0.0737 1.4710 | 0.0737 | 1.4710  |
|                |      |   |                | 0.0328         | 0.0328 0.0434 0.0670 0.9862 | 0.0670 | 0.9862  |

|               |                 |                                      |                |        |                | MEAN ACH FORE |
|---------------|-----------------|--------------------------------------|----------------|--------|----------------|---------------|
| LOCATION      | TRANSECT<br>NO. | STATION<br>NO.                       | GRAB<br>REP. 1 | ⊢ w    | M)<br>REP. 3   | WEIG          |
| DETROIT RIVER | 4.              | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>; | 0.0425         |        | 0.0537         | 0.9731        |
|               |                 | 2                                    | 1 -            | 0.0368 | 0.0293         | 0.7789        |
|               |                 |                                      | 1 -            | 0.0524 | 0.0844         | 1.5626        |
|               | 15              | -                                    |                | 0.0100 | 0.0060         | 0.1570        |
|               |                 | 7                                    | ١ ٠            |        | 0.0166         | 1.3615        |
|               |                 |                                      | 8              | 1 .    | ٠.             | 0.0881        |
|               | 16              | -                                    | 0.1454         | 0.1047 | 0.1543         | 2.7850        |
|               |                 | 2                                    | ļ ÷.           | 0.0528 | 0.0641         | 1.5432        |
|               |                 | <br>                                 |                | 0.0242 |                | 0.4607        |
|               | 17              | -                                    | 9              | 0.0456 | 0.0308         | 0.7885        |
|               |                 | 7                                    |                |        | 0.0272         | 0.8127        |
|               |                 |                                      | ) <u> </u>     | 0.0037 | 0.0071         | 0.5578        |
|               | 8               | -                                    | 0.1862         | 0.0653 | • <u>-</u> • • | 2.2801        |
|               |                 | 7                                    | .036           | 0.0318 | 0.0559         | 0.8547        |
|               |                 |                                      | 060            | 0.0277 | 1 [-           | 1.3015        |
|               | 49              |                                      |                | 0.2377 | 0.0209         | 2.5309        |
|               |                 | 2                                    |                | 0.0162 | 0.0140         | 0.3154        |
|               |                 | 6                                    |                | 0.0017 | 0.0114         | 0.1109        |
|               | 20              | -                                    |                | ٠.     | 8              | 0.1646        |
|               |                 | 2                                    | 0.0042         | 0.0139 | 0.0032         | 0.1467        |
|               |                 | e                                    | · - ·          | 0.0047 | 0.0050         | 0.1426        |
|               | 21              | -                                    | 0.0219         | 0.0167 | 0.0086         | 0.3250        |
|               |                 | 8                                    | 0.0031         | 0.0084 | 0.0206         | 0.2210        |
|               |                 |                                      | 9010           | 4,00   | 8800           | 7460          |

| MACROZOOBENTHOS R | PONAR GRAB          | BIOMASS                         | DATA-1984      | 14 OCTOBER             | BER          | 200     |
|-------------------|---------------------|---------------------------------|----------------|------------------------|--------------|---------|
| LOCATION          | TRANSECT<br>NO.     | STATION<br>NO.                  | GRAB<br>REP. 1 | WEIGHT (GM) REP. 2 REP | M)<br>REP. 3 |         |
| ST. CLAIR RIVER   | -                   | -<br>-                          | 0.0015         | 0.0020                 | 0.0020       | 0.0378  |
|                   |                     | 8                               | 0.0021         | 0.0019                 | 0.0016       | 0.0386  |
|                   |                     |                                 | 0.0019         | 0.0006                 | 0.0008       | 0.0227  |
|                   | 7                   | +                               | 0.0840         | 0.0478                 | 0.0706       | 1.3938  |
|                   |                     | 2                               | 0.1177         | 0.1101                 | 0.0748       | 2.0839  |
|                   |                     |                                 | 0.2513         |                        | 0.0708       | 3.5240  |
| •                 |                     | ;<br>;<br>;<br>;<br>;<br>;<br>; | 0.0039         | 0.0015                 | 0.0029       | 0.0572  |
|                   |                     | 7                               | 0.0060         | 0.0032                 | 0.0022       | 0.0785  |
|                   |                     | 0                               | 0.0018         | 0.0039                 | 0.0034       | 0.0627  |
|                   | 4                   | -                               |                | 0.1658                 | 0.1670       | 3.2092  |
|                   |                     | 7                               | 0.0580         | ó                      |              | 0.9373  |
|                   |                     | 0                               | 0.0078         | 0.0529                 | 0.1007       | 1,1115  |
|                   | <b>S</b>            | -                               | 0.2297         | 0.3163                 | 0.1466       | 4.7697  |
|                   |                     |                                 | 0.1522         | 0.2071                 | 0.1590       | 3.5694  |
| •                 |                     | 6                               |                | 0.0069                 | 0.0057       | 0.4056  |
|                   | 9                   | -                               | 0.0823         | 0.1496                 | 0.2234       | 3.1355  |
|                   |                     | 7                               | 0.0655         | 0.0875                 | 0.0788       | 1.5963  |
| ,                 |                     | 6                               | 0.1217         | 0.0656                 | 0.1044       | 2.0089  |
|                   |                     | -                               | 0.2464         | 1.0654                 | 0.1994       | 10.4071 |
| •                 |                     | 8                               | 0.0942         | 0.0507                 | 0.0210       | 1.1423  |
|                   |                     | 6                               | 0.0684         | 0.1028                 | 0.0892       | 1.7934  |
|                   | 80                  | -                               | 0.0203         | 0.0442                 | 0.0602       | 0.8587  |
|                   |                     | 8                               | 0.0594         | 0.0497                 | 0.0262       | 0.9318  |
|                   |                     | 6                               | 0.0326         | 0.0448                 | 0.0301       | 0.7403  |
|                   | 1 1 1 1 1 1 1 1 1 1 |                                 |                |                        |              |         |

The state of the s

| MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 | PONAR GRAB  | BIOMASS        | DATA-198                      | 4 OCTOBER                   | BER          |  |
|--|---|----------------|-------------------------------|-----------------------------|--------------|--|
| LOCATION                                     | TRANSECT STATION GRAB WEIGHT(GM) NO. NO. REP. 1 REP. 2 RE | STATION<br>NO. | GRAB<br>REP. 1                | WEIGHT (G<br>REP. 2         | M)<br>REP. 3 | GRAB WEIGHT(GM) DRY WEIGHT<br>REP. 1 REP. 2 REP. 3 (G/SQ. METER) |
| ST. CLAIR RIVER                              | RIVER 9   | -              | 0.0033                        | 0.0033 0.0022 0.0030 0.0585 | 0.0030       | 0.0033 0.0022 0.0030 0.0585                                      |
|  | •   | 7              | 0.0019                        | 0.0019 0.0022 0.0017 0.0399 | 0.0017       | 2 0.0019 0.0022 0.0017 0.0399                                    |
|  |   | e              | 3 0.0124 0.0025 0.0197 0.2383 | 0.0124 0.0025 0.0197 0.2383 | 0.0197       | 0.2383   |
|  | 9   | -              | 0.0020 0.0019 0.0014 0.0365   | 0.0020 0.0019 0.0014 0.0365 | 0.0014       | 0.0365   |
|  |   | 7              | 2 0.0295 0.0125 0.0320 0.5096 | 0.0295 0.0125 0.0320 0.5096 | 0.0320       | 0.5096   |
|  |   | 6              | 3 0.0716 0.0708 0.0988 1.6611 | 0.0708                      | 0.0988       | 0.0716 0.0708 0.0988 1.6611                                      |

| ACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 | S PONAR | GRAB         | BIOMASS        | DATA - 196     | 14 OCTOBER                  | BER           |                       |   |
|---|---------|--------------|----------------|----------------|-----------------------------|---------------|-----------------------|---|
| LOCATION                                    | T RAN   | NSECT<br>NO. | STATION<br>NO. | GRAB<br>REP. 1 | OL                          | M)<br>REP. 3  | MEAN<br>DRY<br>(G/SQ. | MEAN ASH FREE<br>DRY WEIGHT<br>G/SQ. METER) |
| LAKE ST. CLAIR                              |         | =            | -              | 0.0387         | 0.0387 0.0605 0.0424 0.9751 | 0.0605 0.0424 | 0.9751                | -   |
|   |         |              | 7              | 0.0569         | 0.0569 0.0511 0.0776 1.2782 | 0.0776        | 1.278                 |   |
|   |         |              | 0              | 0.0821         | 0.0821 0.0581 0.0860 1.5577 | 0.0860        | 1.5577                | 7   |
|   | -       | 12           | -              | 0.0295         |                             | C.0187 0.478  | 0.478                 | 9   |
|   |         |              | 7              |                |                             | 0.0505 0.0257 | 0.7596                | . 9   |
|   |         |              | 8              |                | 0.0382 0 0403 0.0297 0.7451 | 0.0297 0.7451 | 0.745                 | -   |
|   | -       | 13           | -              | 0.0088         | 0.0088 0.0087 0.0087 0.1804 | 0.0087        | 0.180                 | 4   |
|   |         |              | \<br>          | 0.0236         |                             | 0.0368        | 1.188                 |   |
|   |         |              | 6              | 0.3903         |                             | 0.0182 0.0208 | 2.956                 | <b>+</b>                                    |

|                              | * |
|------------------------------|---|
| OCTOBER                      |   |
| PONAR GRAB BIOMASS DATA-1984 |   |
| BIOMASS                      |   |
| GRAB                         |   |
| PONAR                        |   |
| MACROZOOBENTHOS              |   |

| MACKUZUUBENINUS | PUNAK GKAB      | BIOMASS DAIA-1884 | DAIA-198       | 4 OCTOBER   | פרא          |  |
|-----------------|-----------------|-------------------|----------------|-------------|--------------|--|
| LOCATION        | TRANSECT<br>NO. | STATION<br>NO.    | GRAB<br>Rep. 1 | WEIGHT (GM) | M)<br>REP. 3 | MEAN ASH FREE<br>DRY WEIGHT<br>(G/SQ. METER) |
| DETROIT RIVER   | 14              | -                 | 0.1840         | 0.2080      | 0.1020       | 3.4020                                       |
|                 |                 | 7                 | 0.0068         | 0.0051      | 0.0157       | 0.1901                                       |
|                 |                 | က                 | 0.0235         | 0.0127      | 0.0116       | 0.3292                                       |
|                 | 15              | -                 | 0.3209         | 0.1518      | 0. 1823      | 4.5108                                       |
|                 |                 | 8                 | 0.0521         |             | 0.0444       | 0.7809                                       |
|                 |                 | е                 | 0.0650         | 0.0153      | 0.1347       | 1.4806                                       |
|                 | 16              | -                 | 0.0448         | 0.0413      | 0.0365       | 0.8443                                       |
|                 |                 | 2                 | 0.0344         | 0.0353      | 0.1594       | 1.5777                                       |
|                 |                 |                   | 0.0078         |             | 0.0092       | 0.1440                                       |
|                 | 17              | -                 | 0.0532         | 0.0775      | 0.0766       | 1.4276                                       |
|                 |                 | 2                 | 0.0651         | ı           | 0.0574       | 0.9752                                       |
|                 | ,               | 6                 | 0.0232         | 0.0111      | 0.0181       | 0.3609                                       |
|                 | 85              | -                 | 0.0416         | 0.0813      | 0.0771       | 1.3774                                       |
|                 |                 | 2                 | 0.0467         | 0.0670      | 0.0673       | 1.2466                                       |
| •               |                 | 6                 | 0.0616         | 0.0510      |              | 1.1667                                       |
|                 | 91              | -                 | 0.1810         | 0.0429      | 0.0246       | 1.7114                                       |
|                 |                 | 2                 | 0.0173         | 0.0271      | 0.0151       | 0.4097                                       |
|                 |                 | 6                 | 0.0104         | 0.0045      | 0.0262       | 0.2830                                       |
|                 | 20              | -                 | 0.0378         | 0.0733      | 0.0466       | 1.0860                                       |
|                 |                 | 2                 | 0.0178         | 0.0087      | 0.0059       | 0.2231                                       |
|                 |                 | ၈                 | 0.0214         | 0.0161      | 0.0049       | 0.2920                                       |
|                 | 21              | -                 | 0.0515         | 0.0236      | 0.0225       | 0.6721                                       |
|                 |                 | 7                 | 0.0210         | 0.0124      | 0.0218       | 0.3802                                       |
|                 |                 |                   |                |             |              |  |

0.0021 0.0071 0.0068 0.1102

## APPENDIX F

Macrozoobenthos Physical Data

| LOCATION TRANSEC |          |         |               |               |                |              |               |             |                 |                            |                               | !              |
|------------------|----------|---------|---------------|---------------|----------------|--------------|---------------|-------------|-----------------|----------------------------|-------------------------------|----------------|
| ST. CLAIR RIVER  | TRANSECT | STATION | LORAN         | COORD.        | DEPTH<br>(FT.) | BOTTOM TYPE  | TEMP<br>SURF. | • -         | WATER<br>(FT./s | R VEL.<br>/SEC.)<br>BOTTOM | LIGHT<br>(FT. CAN<br>SURF. BO | CANDLES BOTTOM |
|                  | -        | -       | 308574        | 496881        | 10.0           | 25           | 7.0           | 7.2         | 1.7             | +.+                        | 8                             | <b>50</b>      |
|                  |          | 7       | 308574        | 496878        | 4.0            | SAND         | 5.9           | 6.0         | <b>9</b> .+     | 1.1                        | 250                           | \$             |
|                  |          | 6       | 308572        | 496881        | 17.0           | SAND         | J             | 9.0         | 8.              | 1.3                        | 8                             | 88             |
| •                | 7        | -       | 308755        | 497136        | 3.0            | SANDY GRAVEL | 6.3           | 6.3         | 1.1             | 6.0                        | 300                           | 15             |
|                  |          | 7       | 308752        | 497137        | 0.0            | SILT         | 6.0           | 6.0         | 6.              | 4.0                        | 8                             | ED.            |
| •                |          | ၉       | 308754        | 497138        | 15.0           | GRAVEL       | 0.9           | 6.0         | 2.2             | 6.7                        | 8                             | 0              |
|                  | 6        | •       | 29            | 497390        | 7.0            | SANDY GRAVEL | 5.0           | 0.0         | 9.0             | <b>-</b>                   | 8                             | 280            |
|                  |          | 7       | ່ຕ            | 497380        | 13.0           | GRAVEL       | 5.0           | <b>9.0</b>  | 1.2             | 1.3                        | 650                           | 210            |
|                  |          | 6       | 309019        | 497375        | 18.0           | GRAVEL       | 5.0           | 3.0         | 89.             | 6.0                        | 8                             | <b>3</b> 00    |
| •                | 4        | -       | 309578        | 498266        | 3.0            | SANDY SILT   | 6.1           | 6.1         | 1.2             | +.+                        | 3500                          | <b>500</b>     |
|                  |          | 7       | 309569 498252 | 498252        | 40.0           | SAND         | 9             | 6.0         | <b>6</b> .      | +.+                        | 300                           | 350            |
|                  |          | n       | 309568        | 498259        | 15.0           | SAND         | <b>9</b>      | 6.0         | 2.4             | 2.0                        | 8                             | 30             |
| •                | ស        | -       | 309945 498663 | 498663        | <b>3</b> .0    | SANDY SILT   | 6.0           | 6.0         | 2.2             | 0.2                        | 3000                          | 1800           |
|                  |          | 7       | 309945 498653 | 498653        | 0.0            | SANDY CLAY   | න<br>ග        | g. 73       | 2.1             | 4.0                        | 8                             | <b>8</b>       |
|                  | 1        | 6       | 309941        | 498651        | 15.0           | SANDY GRAVEL | 9             | 6.0         | 3.0             | 0.9                        | 3000                          | 250            |
| -                | ø        | -       | 310125 498762 | 498762        | 4.0            | >            | 5             | 6.1         | 0.3             | 0.0                        | 3500                          | 8              |
|                  |          | ~       | 310123        | 498761        | 10.0           | SANDY SILT   | ა.<br>დ       | 80<br>00    | 1.2             | 9.0                        | 4000                          | 1300           |
|                  |          | 6       | 310123 498763 | 498763        | 15.0           | SANDY SILT   | 6.0           | 6.0         | 4.              | 1.2                        | 1000                          | 480            |
| -                | 7        | -       | 310379 498903 | 498903        | 5.0            | SANDY SILT   | 6.0           | <b>6</b> .0 | 0.5             | 4.0                        | 450                           | 200            |
|                  |          | 7       | 310378        | 498904        | 0.0            | SANDY SILT   | 6.0           | 8.0         | 6.0             | 0.1                        | 089                           | 550            |
|                  |          | 6       | 310378 498904 | 498904        | 20.0           | SANDY SILT   | 6.0           | 6.0         | 1.5             | 1.2                        | 800                           | 520            |
| •                | 80       | -       | 310662        | 310662 499026 | 3.0            | SANDY SILT   | 6.1           | 6.0         | 0.5             | 0.5                        | 3500                          | 2100           |
|                  |          | 8       | 310662        | 310662 499026 | 7.0            | SILT         | 0.9           | 6.0         | -               | 0.5                        | 909                           | 450            |
|                  |          | 6       | 310662        | 499026        | 13.0           | SILT         | 5.7           | 5.7         | 0.5             | 0.5                        | 8                             | 200            |

|   |     | TITELLE 4.0 SANDY SILT          | 10000  | •        | SANDY | SILT | 0.<br>9     | 6.0 5.9 0.3 0.0 4200 578  | 0.3      | c   | 435  | 0.50 |
|---|-----|---------------------------------|--------|----------|-------|------|-------------|---------------------------|----------|-----|------|------|
|   | •   |                                 |        |          |       | :    |             |                           |          |     | 3    | 2,2  |
|   | 7   | 2 310776 499059 7.0 SANDY SILT  | 499059 | 7.0      | SANDY | SILT | <b>e</b> .0 | 6.0 5.9 0.7 0.3           | 0.7      | 0 0 |      | 7.0  |
|   |     |                                 |        |          |       |      |             | 064 009 4:0               |          |     | 450  | 9    |
| *************************************** | 2   | 310//6 499060 10.0 SANDY SILT   | 499060 | o.<br>•  | SANDY | SILT | 5.7         | 5.7 5.6 0.8 1.4 4.20 2.10 | <b>4</b> | -   | 450  |      |
| \$                                      | •   |                                 |        |          |       | i    |             |                           |          | •   | 2    | 018  |
| 2                                       |     | 310695 499088 3.0 SAND          | 499088 | 9<br>0   | SAND  |      | 5.6         | 5.6 5.6 0.7 0.9 26.0      | 0.7      |     | 0000 |      |
|   | •   |                                 |        |          |       |      |             | 0041 0066 3:0             |          |     | 3    | 3    |
|   | N . | 310695 499089 7.0 SANDY SILT    | 499069 | 7.0      | SANDY |      | 8.<br>13.   | 5.5 5.5 0.4 Sec. 1.       |          | -   | 0000 |      |
|   |     |                                 |        |          |       |      | 1           | 0091 0065 1:0             |          |     | 365  | 8    |
|   | 2   | 3 310685 488080 10.0 SANDY SILT | 488080 | 0.<br>0. | SANDY | SILT | 5.6         | 5.6 5.6 0.6               | 9        |     | 2    |      |
|   |     | 1                               | ,      |          |       |      | , , , , , , |                           |          | ?   | 3    |      |

F-2

| MACROZOOBENTHOS PHYSIC | VTHOS |    | NL DATA-1983     | MAY           |                             |                |        |      | *NO1          | *NOTE* (-) NUMBERS INDICATE MISSING DATA | UMBERS                  | INDICAT                                  | E MISS   | ING DATA                               |
|------------------------|-------|----|------------------|---------------|-----------------------------|----------------|--------|------|---------------|--|-------------------------|--|----------|--|
| LOCATION               |       |    | TRANSECT STATION | LORAN         | LORAN COORD.<br>Upper Lower | DEPTH<br>(FT.) | 80110M | TYPE | TEMP<br>SURF. | TEMP. (C.)<br>Surf. Bottom               | WATEI<br>(FT.,<br>SURF. | WATER VEL.<br>(FT./SEC.)<br>SURF. BOTTOM |          | LIGHT<br>(FT. CANDLES)<br>SURF. BOTTOM |
| LAKE ST. CLAIR         | CLAIR | =  | -                | 311490        | 311490 499370               | 17.0           | CLAY   |      | 7.3           | 7.3                                      | 0.7                     | 0.0                                      | 350      | £                                      |
|                        |       |    | 8                | 311485        | 311485 499375               | 20.0           | CLAY   |      | 7.1           | 7.1                                      | 0.3                     | 0.0                                      | <u>ō</u> | 40                                     |
|                        |       |    | 6                | 311480        | 311480 499380               | 25.0           | CLAY   |      | 12.           | 9.7                                      | 0.2                     | 0.4                                      | 750      | 40                                     |
|                        |       | 12 | -                | 311635        | 311635 498445               | 20.0           | CLAY   |      | 0.0           | 0.6                                      | 0.5                     | 0.2                                      | 90       | 7                                      |
|                        |       |    | 8                | 311630        | 311630 489450               | 20.0           | CLAY   |      | 10.0          | 0.0                                      | ю.<br>О                 | 0.2                                      | 250      | 7                                      |
|                        |       |    | e                | 311625        | 311625 499455               | 25.0           | CLAY   |      | 7.1           | 7.0                                      | 0.2                     | 0.5                                      | 90       | 0                                      |
|                        |       | 13 | ~                | 311732        | 311732 488492               | 20.0           | CLAY   |      | 8             | 7.9                                      | -<br>0.                 | 0.0                                      | 2500     | 32                                     |
|                        |       |    | 2                | 311728 499497 | 489497                      | 20.0           | CLAY   |      | o.            | 0.0                                      | 0.3                     | 0.2                                      | 2500     | 12                                     |
|                        |       |    | က                | 311723        | 311723 488502 25.0 CLAY     | 25.0           | CLAY   |      | 0.6           | <b>8</b> . 1                             | 0.0                     | 0.0 0.0                                  | 4        | 7                                      |

| MACROZOOBENTHOS PHYSICA | _        | DATA-1983                             | MAY           |                 |                |              | *NOTE            | <u>-</u>         | NUMBERS                 | INDICATE        | E MISSING                     | ING DATA           |
|-------------------------|----------|---------------------------------------|---------------|-----------------|----------------|--------------|------------------|------------------|-------------------------|-----------------|-------------------------------|--------------------|
| LOCATION                | TRANSECT | STATION                               | LORAN         | COORD.<br>LOWER | DEPTH<br>(FT.) | BOTTOM TYPE  | TEMP.            | . (c.)<br>Bottom | WATER<br>(FT./<br>Surf. | YEL.<br>SEC.)   | LIGHT<br>(FT. CAN<br>SURF. BO | CANDLES)<br>BOTTOM |
|                         |          | -                                     | 312583        | 499891          | o.<br>9        | SAND         | 9.5              | 0.6              | 6.0                     | 0.7             | 3200                          | 38                 |
|                         |          | 2                                     | 312580        | 499892          | 10.0           | SANDY SILT   | 0.<br>0.         | 0.6              | 0.7                     | <b>6</b> .0     | 3200                          | ō                  |
|                         |          | 6                                     | 312578 499895 | 499895          | 19.0           | SILT         | 0.<br>0.         | <b>8</b> 0       | O .5                    | 9.0             | 3200                          | 87                 |
|                         | 15       | -                                     | 312646        | 498935          | <b>6</b> .0    | SAND         | <b>6</b> 0       | 9.6              | 0.7                     | 0.6             | 3500                          | 120                |
|                         |          | 7                                     | 312647        | 499931          | 1.0            | SANDY SILT   | 6<br>6           | 8.6              | £.3                     | 1.3             | 3100                          | 12                 |
|                         |          | 6                                     | 312646        | 499926          | 19.0           | SANDY SILT   | <b>9</b>         | 4.               | 9.                      | 1.1             | 3000                          |                    |
|                         | 95       | -                                     | 312841        | 499995          | <b>6</b> .0    | SILT         | <b>8</b> 0       | <b>8</b> . 1     | <del>-</del> 0          | 0. <del>1</del> | 3500                          | 50                 |
|                         |          | 2                                     | 312841        | 499996          | 11.0           | SILT         | 8.2              | <b>.</b> 4       | 0.5                     | 0.4             | 3400                          | 12                 |
|                         |          | 6                                     | 312842        | 499998          | 18.0           | SANDY SILT   | 9.               | 9. 1             | 6.0                     | O.8             | 3500                          | 4                  |
|                         |          | -                                     | 313064        | 500029          | 9.0            | SANDY SILT   | 9.4              | 8.7              | 0.3                     | 0.1             | 3000                          | 70                 |
|                         |          | 7                                     | 313098 500033 | 500033          | 12.0           | SILT         | 4.6              | 8.3              | 1.3                     | 8.0             | 3100                          | 30                 |
|                         |          | 6                                     | 313110        | 500037          | 20.0           | SILT         | <b>6</b> 0       | 9.               | 4.4                     | <b>8</b> .0     | 3400                          | 7                  |
|                         | 18       | -                                     | 314085 500676 | 500676          | 0.0            | SILT         | 10.2             | 10.2             | <b>0</b>                | 0.5             | <b>4</b> 000                  | 700                |
|                         |          | 7                                     | 314083        | 500675          | 10.0           | SILT         | 10.2             | 10.1             | 0.3                     | o.3             | 2500                          | 830                |
| •                       |          | е                                     | 314083        | 314083 500675   | 15.0           | SILT         | 10.2             | 10.2             | 6.0                     | <b>0</b> .4     | 3180                          | 99                 |
|                         | 19       | -                                     | 314160        | 500808          | 6.0            | SILTY CLAY   | 10.0             | 6.6              | <b>o</b> .              | 0.1             | 3200                          | 740                |
|                         |          | 7                                     | 314154        | 500806          | 11.0           | GRAVEL       | 10.0             | 6.0              | 0.7                     | 0.7             | 3500                          | -                  |
|                         |          | က                                     | 314141        | 500802          | 20.0           | GRAVEL       | 6.<br>6.         | 8.8              | 1.3                     | 8.<br>O         | 650                           | 65                 |
|                         | 50       | -                                     | 314176        | 500888          | 5.0            | GRAVEL       | 9.1              | 9.1              | 7.0                     | 9.4             | 4300                          | 800                |
|                         |          | 2                                     | 314158        | 500888          | 14.0           | SILTY GRAVEL | 9                | 9.1              | 1.7                     | 1.2             | 3000                          | Ĉ.                 |
|                         |          | က                                     | 314152        | 500889          | 23.0           | SILTY GRAVEL | - G              | 9.1              | <b>6</b> .              | 1.3             | 3000                          | 28                 |
|                         | 21       | -                                     | 314194        | 500942          | 0.6            | SANDY SILT   | 9.4              | 9.1              | <b>8</b> .0             | o.5             | 80                            | 60                 |
|                         |          | 2                                     | 314166        | 500940          | 20.0           | CLAY         | 5                | 9.S              | 9.0                     | 4.0             | 2400                          | 43                 |
|                         |          | 6                                     | 314162        | 500941          | 25.0           | CLAY         | 6.<br>6.         | 9.7              |                         | 8.0             | 3300                          | -                  |
|                         | <br>     | , , , , , , , , , , , , , , , , , , , |               | ;<br>;<br>;     | ;<br>;<br>;    |              | 1<br>1<br>1<br>1 |                  |                         |                 |                               |                    |

| LOCATION        | TRANSECT | STATION | LORAN         | COORD.<br>LOWER | DEPTH<br>(FT.) | BOTTOM TYPE    | TEMP.       | . (C.)<br>BOTTOM | WATE<br>(FT. | WATER VEL.<br>(FT./SEC.)<br>URF. BOTTOM | LI<br>(FT. (<br>SURF. | <b>8</b> 6 |
|-----------------|----------|---------|---------------|-----------------|----------------|----------------|-------------|------------------|--------------|---|-----------------------|------------|
| ST. CLAIR RIVER |          | -       | 308577        | 496881          | 6.0            | SAND           | 0.1         | -0.1             | 1.0          | 1.3                                     | 2100                  | 1300       |
|                 |          | 7       | 308577        | 496882          | 9.5            | SAND           | -0.1        | -0.1             | 1.4          | 1.1                                     | ± 004                 | 420        |
|                 |          | e       | 308574        | 496880          | 17.0           | SAND           | -0.1        | -0.1             | 1.6          | 1.9                                     | 478                   | 460        |
|                 | 7        | -       | 308753 497136 | 497136          | 6.0            | SANDY SILT     | -0.1        | -0.1             | 0.4          | 0.1                                     | 44                    | 350        |
|                 |          | 7       | 308754 497137 | 497137          | 11.0           | GRAVEL         | -0.1        | -0.4             | 4.6          | 4.4                                     | <u>\$</u>             | 370        |
|                 |          | e       | 308753 497135 | 497135          | 17.0           | GRAVEL         | -0.1        | -0.1             | 3.0          | 2.7                                     | 1200                  | 200        |
|                 | 6        | -       | 309026 497389 | 497389          | 10<br>10       | GRAVEL         | -0.1        | -0.1             | 4.0          | 2.0                                     | 570                   | 240        |
|                 |          | 7       | 309025 497375 | 497375          | 0.4            | GRAVEL         | -0.1        | -0.4             | 4.4          | 1.0                                     | 8                     | 75         |
|                 |          | 6       | 309030 497379 | 497379          | 20.0           | CLAY           | -<br>0.4    | -0.1             | 1.7          | 1.8                                     | 240                   | 99         |
|                 | 4        | -       | 309578 498265 | 498265          | ر<br>د<br>د    | SANDY SILT     | -0.1        | -0.1             | 1.2          | 0.5                                     | 82                    | 46         |
|                 |          | 7       | 309568 498254 | 498254          | 13.0           | SILT           | -0.1        | -0.1             | 2.3          | 1.2                                     | 130                   | 79         |
|                 | 1        | 6       | 309566 498258 | 498258          | 16.0           | SILTY GRAVEL   | -0.         | -0.1             | 2.6          | 2.8                                     | 9                     | 99         |
|                 | so.      | -       | 309946 498662 | 498662          | 0.9            | SILT           | -0.1        | -0.1             | 0.8          | 0.2                                     | 340                   | 12         |
|                 |          | 8       | 309937 498651 | 498651          | 0.0            | SANDY SILT     | - O         | -0.1             |              | 1.2                                     | 55                    | 37         |
|                 |          | e       | 309940 498650 | 498650          | 16.0           | GRAVEL         | - O         | -0.1             | 2.6          | 2.0                                     | 430                   | 300        |
|                 | g        | -       | 310122 498756 | 498756          | 0.4            | SANDY SILT     | -0.1        | -0.4             | 1.0          | 4.0                                     | 380                   | 130        |
|                 |          | 7       | 310122 498760 | 498760          | 7.0            | SANDY SILT     | -<br>-<br>- | -0.1             | 0.7          | 1.0                                     | 640                   | 330        |
|                 |          | ю       | 310125 498760 | 498760          | 1.0            | SILT           | ,<br>-      | -0.1             | 1.2          | 9.0                                     | 1500                  | 330        |
|                 | 7        | -       | 310377        | 498901          | 7.0            | SANDY SILT     | 0.1         | -<br>0. 1        | 0.7          | 9.0                                     | 4200                  | 1500       |
|                 |          | 8       | 310378 498904 | 498904          | 10.0           | ORGANIC DEBRIS | -0.1        | -0.1             | 1.6          | 2.1                                     | 930                   | 570        |
|                 |          | 6       | 310379 498904 | 498904          | 17.0           | CLAY           | -0.1        | -<br>0           | 2.2          | 1.3                                     | 4700                  | 610        |
|                 | •        | -       | 310652        | 499021          | <b>4</b><br>0. | CLAY           | -0.1        | ٠.<br>م.         | •<br>•       | 0.1                                     | 470                   | 300        |
|                 |          | 8       | 310653 499021 | 499021          | <b>8</b> .0    | SANDY SILT     | -0.4        | -0.1             | 4.0          | 0.2                                     | <b>48</b> 0           | 280        |
|                 |          | 6       | 310654        | 499023          | 13.0           | SANDY SILT     | -0.1        | -0.1             | 0.0          | 8 0                                     | 180                   | 34         |
|                 | 11111111 |         |               | 111111          | 1 1 1 1 1 1 1  |                |             |                  | 1 1          | 3 1 2 1 1 2 1 1                         |                       |            |

| <b>9</b> 0 | - | 310766                    | 310766 499051 5.0 SAND | 5.0         | SAND                            | -0.1   | <del>-</del> 0.4 | 4.0 | 4.0 | -0.1 -0.1 0.4 0.4 590 42  | 42  |
|------------|---|---------------------------|------------------------|-------------|---------------------------------|--|------------------|-----|-----|---------------------------|-----|
|            | 8 | 310761                    | 499057                 | 7.0         | 310761 499057 7.0 SANDY SILT    | 2 310761 489057 7.0 SANDY SILT -0.1 -0.1 1.0 0.6 250 100 | -0.1             | 1.0 | 9.0 | -0.1 -0.1 1.0 0.6 250 100 | 8   |
|            | 6 | 3 310760 499057 15.0 SILT | 499057                 | 15.0        | SILT                            | 3 310760 499057 15.0 SILT -0.1 -0.1 0.4 0.8 270 33       | -0.1             | 0.4 | 0.8 | -0.1 -0.1 0.4 0.8 270 33  | 33  |
| ç          | - | 310888                    | 310888 499088 4.0 SAND | 4.0         | SAND                            | 10 1 310888 499088 4.0 SAND -0.1 -0.1 0.2 0.3 870 410    | - o              | 0.2 | 0.3 | -0.1 -0.1 0.2 0.3 870 410 | 410 |
|            | 7 | 2 310881 499091 8.0 SAND  | 499091                 | <b>8</b> .0 | SAND                            | 2 310881 499091 8.0 SAND -0.1 -0.1 0.4 0.2 680 300       | -0.1             | 0.4 | 0.2 | -0.1 -0.1 0.4 0.2 680 300 | 8   |
|            | 6 | 310878                    | 499090                 | 15.0        | 3 310878 499090 15.0 SANDY SILT |  | 0.1              | 0.2 | 0.1 | -0.1 -0.1 0.2 0.1 73 26   | 26  |

F-7

| MACROZOOBENTHOS PHYSICAL |          | DATA-1983 | OCTOBER | ER                          |                |        |                            | *NOTE     | N (-) +:                   | UMBERS                | *NOTE* (-) NUMBERS INDICATE MISSING DATA | E MISS       | ING DATA                               |
|--------------------------|----------|-----------|---------|-----------------------------|----------------|--------|----------------------------|-----------|----------------------------|-----------------------|--|--------------|--|
| LOCATION                 | TRANSECT | STATION   |         | LORAN COORD.<br>Upper Lower | DEPTH<br>(FT.) | BOTTOM | TYPE                       | TEMP.     | TEMP. (C.)<br>Surf. Bottom | WATE<br>(FT.<br>SURF. | WATER VEL.<br>(FT./SEC.)<br>Surf. Bottom | - •.         | LIGHT<br>(FT. CANDLES)<br>SURF. BOTTOM |
| LAKE ST. CLAIR           | =        | -         | 311479  | 311479 499365               | 20.0           | SILT   | ,<br>,<br>,<br>,<br>,<br>, | 13.0      | 13.0 13.0                  | 0.7                   | 0.5                                      | 2500         | 92                                     |
|                          |          | 7         | 311467  | 311467 499370               | 21.0           | SILT   |                            | 13.0 13.0 | 13.0                       | 0.3                   | 0.3                                      | 2700         | 24                                     |
|                          |          | 6         | 311465  | 311465 499378               | 27.0           | SILT   |                            | 13.0 13.0 | 13.0                       | 0.3                   | 0.2                                      | 3800         | 25                                     |
|                          | 12       | -         | 311626  | 499444                      | 22.0           | SILT   |                            | 12.5 12.5 | 12.5                       | 0.3                   | 0.3                                      | 1300         | =                                      |
|                          |          | 7         | 311620  | 311620 489448               | 23.0           | SILT   |                            | 12.1      | 12.5                       | 0.3                   | 0.2                                      | 1700         | 7                                      |
|                          |          | 6         | 311619  | 311619 499450               | 27.0           | SILT   |                            | 12.0      | 12.5                       | 0.3                   | 0.3                                      | 3300         | -                                      |
|                          | 13       | -         | 311713  | 311713 499486               | 20.0           | SILT   |                            | 12.0 12.0 | 12.0                       | 0.5                   | 0.4                                      | 8            | 29                                     |
|                          |          | 2         | 311712  | 499495                      | 21.0           | SILT   |                            | 12.0 12.1 | 12.1                       | 0.3                   | 0.3                                      | 1900         | Ç                                      |
|                          |          | 6         | 311711  | 311711 499493               | 27.0           | SILT   |                            | 12.0      | 12.0                       | 0.3                   | 0.2                                      | <del>5</del> | 28                                     |

i

| MACROZOOBENTHOS PHYSICA | _        | DATA-1983 | OCTOBER       | ER              |                    |              | *NOTE*        |                  | UMBERS                               | (-) NUMBERS INDICATE                    |                                 | MISSING DATA       |
|-------------------------|----------|-----------|---------------|-----------------|--------------------|--------------|---------------|------------------|--------------------------------------|---|---------------------------------|--------------------|
| 2                       | TRANSECT | STATION   | LORAN         | COORD.<br>LOWER | <b>DEPTH</b> (FT.) | BOTTOM TYPE  | TEMP<br>SURF. | . (C.)<br>BOTTOM | WATER VEL<br>(FT./SEC.<br>SURF. BOTT | WATER VEL.<br>(FT./SEC.)<br>URF. BOTTOM | LIGHT<br>(FT. CANE<br>SURF. BOT | CANDLES)<br>BOTTOM |
| DETROIT RIVER           | ++       | -         | 312573        | 499878          | 7.0                | GRAVEL       | 12.5          | 12.5             | 0.7                                  | 0.7                                     | <del>1</del> 700                | 260                |
|                         |          | 8         | 312575        | 499890          | 10.5               | SAND         | 12.0          | 12.0             | 4.5                                  | 0                                       | 3400                            | 55                 |
|                         | 1        | 6         | 312574        | 499884          | 20.0               | SAND         | 12.0          | 12.0             | £. 5                                 | 4.4                                     | 2800                            |                    |
|                         | 51       | -         | 312650        | 489940          | <b>9</b> .0        | SANDY CLAY   | 11.00         | 11.8             |                                      | 0.0                                     | 270                             | 73                 |
|                         |          | 8         | 312649        | 312649 499930   | 10.5               |              | 11.8          | 11.0             | 1.7                                  | <b>9</b> .0                             | 980                             | 90                 |
|                         | 1        | n         | 312648        | 499930          | 16.5               | SANDY CLAY   | 11.8          | 11.8             | <b>6</b> .                           | 4                                       | 230                             | <b>56</b>          |
|                         | 16       | -         | 312841        | 499990          | <b>0</b> .9        | SILT         | 11.0          | 11.0             | 0.                                   | 0.0                                     | 520                             | 40                 |
|                         |          | 7         | 312840 489992 | 499992          | 7.0                | SILT         | 11.5          | 11.3             | -<br>-                               | 0.0                                     | 09.80                           | 8                  |
|                         |          | 6         | 312839 499998 | 499998          | 15.0               | SILT         | 11.2          | 11.1             | 9.0                                  | 0.5                                     | 92                              | <b>Q</b>           |
|                         | 11       | -         | 313067 500029 | 500029          | 9.5                | SILTY CLAY   | 11.0          | 11.0             | 0.2                                  | 0.4                                     | 170                             | 320                |
|                         |          | 7         |               | 500031          | 1.0                | SANDY SILT   | 11.2          | 11.2             | £                                    | 0.0                                     | 9                               | 140                |
|                         |          | 6         | 313109        | 500039          | 18.0               | SANDY SILT   | 11.3          | 11.2             | e                                    | 0.7                                     | 280                             | 97                 |
|                         | <b>.</b> | -         | 314063        | 500674          | 5                  | SILT         | 12.0          | 12.0             | 0.3                                  | 0.2                                     | 290                             | 63                 |
|                         |          | 7         | 314084        | 500672          | 7.0                | SILT         | 12.0          | 12.0             | 4.0                                  | <del>-</del> 0.4                        | 1300                            | 910                |
| •                       |          | 6         | 314083        | 500672          | 15.0               | SILT         | 12.0          | 12.0             | 0                                    | 0.7                                     | <del>1</del> 200                | စ္က                |
|                         | 61       | -         | ีดูเ          | 500801          | 50<br>50           | CLAY         | 1.3           | 1.3              | S                                    | 0.3                                     | 2900                            | 1600               |
|                         |          | 7         | 314158        |                 | 11.5               | SANDY GRAVEL | 11.7          | 11.7             | 0.5                                  | 0.3                                     | 670                             | 94                 |
|                         |          | 6         | 314155        | 500803          | 22.0               | SANDY GRAVEL | 12.0          | 11.5             | <b>6</b> .                           | 1.3                                     | 1700                            | 78                 |
|                         | 50       | -         | 314177        | 500974          | 6.5                | SILT         | 12.0          | 12.0             | O.5                                  | 0.2                                     | 1500                            | <b>6</b>           |
|                         |          | 7         | 314165        | 500881          | 11.5               | SANDY GRAVEL | 12.0          | 12.0             | 4.                                   | 4.4                                     | 470                             | <b>4</b> 3         |
|                         |          | 6         | 314158        | 500886          | 17.0               | CLAY         | 12.0          | 12.0             | <b>.</b>                             | 1.7                                     | 330                             | 23                 |
|                         | 21       | -         | 314200        | 314200 500841   | 10.0               | SILT         | 12.0          | 12.0             | 0.5                                  | 4.0                                     | 380                             | 35                 |
|                         |          | 7         | 314183        | 500940          | 11.0               | SANDY SILT   | 12.0          | 12.0             | 0.7                                  | 0.5                                     | 780                             | 42                 |
|                         |          | c         | 314178        | 500940          | 18.0               | SANDY SILT   | 12.0          | 12.0             | 0.7                                  | 0.5                                     | 260                             | 27                 |

| MACROZOOBENTHOS PHYSI | PHYSICAL D | CAL DATA-1984 | MAY           |                 |                |               | *NOTE       | <b>2</b> (-) •   | UMBERS                  | *NOTE* (-) NUMBERS INDICATE MISSING DA | E MISS              | ING DA                         |
|-----------------------|------------|---------------|---------------|-----------------|----------------|---------------|-------------|------------------|-------------------------|--|---------------------|--------------------------------|
| LOCATION              | TRANSECT   | STATION       | LORAN         | CDORD.<br>LOVER | DEPTH<br>(FT.) | BOTTOM TYPE   | TEMP.       | (c.)<br>Bottom   | WATER<br>(FT./<br>SURF. | R VEL.<br>/SEC.)<br>BOTTOM             | LI<br>(FT.<br>SURF. | LIGHT<br>. CANDLE!<br>F. BOTTO |
| ST. CLAIR RIVER       | 1          | -             | 308676        | 496880          | 15.            | SAND          | 0.4         | 0.4              | <b>8</b> 0.             | #·#                                    | 4300                | 3500                           |
|                       |            | 8             | 308676        | 496885          | 10.5           | SAND          | 4.0         | 3.8              | 1.7                     | 1.1                                    | 844                 | 2800                           |
|                       |            |               | 308675        | 496881          | 16.0           | SAND          | 4.0         | 3.9              | 9.                      | <b>6</b> .0                            | 4200                | 2600                           |
|                       | 7          | -             | 308752        | 497136          | 0.0<br>0.0     | SANDY SILT    | 8.          | 4.7              | 0.0                     | 4.0                                    | <u>\$</u>           | 820                            |
|                       |            | 7             | 308754 497137 | 497137          | 10.0           | GRAVELLY CLAY | 4.7         | 4.6              | 9.0                     | 0.4                                    | 3.80                | 270                            |
|                       |            |               | 308755 497137 | 497 137         | 17.0           | SANDY GRAVEL  | 4.8         | 4.6              | 2.3                     | 1.7                                    | 18                  | 8                              |
|                       | 6          | -             | 1 00          | 497390          | 0.0            | SANDY GRAVEL  | 4.7         | 4.6              | 2.4                     | 2.3                                    | 3500                | 3000                           |
|                       |            | a             | 308023        | 497378          | 13.0           | SANDY GRAVEL  | 4.7         | 4.6              | 3.1                     | 2.1                                    | 360                 | 900                            |
|                       | ;          |               | 309026 497376 | 497376          | 17.5           | GRAVEL        | 4.7         | 4.6              | 2.1                     | <b>1</b> .0                            | 2800                | 380                            |
|                       | *          | -             | 309576 498265 | 496265          | <b>1</b> .3    | •             | 9.0         | 5.0              | 1.2                     | 0.8                                    | 8                   | 200                            |
|                       |            | a             | 309571        | 498261          | 10.5           | SANDY SILT    | <b>.</b>    | <b>D</b>         | 2.2                     | <b>9</b> .                             | 8                   | 9                              |
|                       |            |               | 309568        | 498258          | 17.0           | SANDY SILT    | 9.2         | 5.4              | 2.5                     | 1.9                                    | 320                 | <b>9</b>                       |
|                       | un         | -             | 308948        | 498664          | 9.0            | SANDY SILT    | 0.4         | 4.0              | <b>.</b>                | 0.2                                    | 730                 | 4                              |
|                       |            | 7             | 308941        | 498653          | 6.0            | SANDY SILT    | 4           | <b>9</b> .       | 2.1                     | 1.6                                    | 200                 | 170                            |
| •                     |            |               | 308836        | 498650          | 15.0           | GRAVEL        | 4           | 6.4              | 2.8                     | 4.5                                    | <b>50</b>           | 8                              |
|                       | <b>o</b> r | -             | 310122        | 498758          | 0.4            | SANDY SILT    | . t         | <b>8</b> 0<br>.0 | 0.6                     | 0.4                                    | 520                 | 270                            |
|                       |            | 7             | 310121        | 498760          | . E            | SANDY SILT    | <b>6</b> .4 | <b>0</b> .       | -                       | 0.8                                    | <u>\$</u>           | 8                              |
| •                     |            |               | 310122        | 498760          | 4.0            | SANDY SILT    | <b>8</b> .0 | 0.0              | 1.3                     | 0.8                                    | 1200                | <b>4</b>                       |
|                       | 7          | -             | 310376        | 498901          | 6.0            | SANDY SILT    | 5.2         | 5.2              | 9.0                     | O.5                                    | 750                 | 210                            |
|                       |            | 7             | . '           | 498901          | 1.0            | SILTY CLAY    |             |                  | 2.4                     | 2.4                                    | ÷<br>8              | 230                            |
|                       |            | 6             | 310377        | 498903          | 19.0           | SILTY CLAY    | ю<br>О      | 9.<br>0.         | 2.6                     | 1.3                                    | <u>\$</u>           | 56                             |
|                       | 60         | -             | 310652 499021 | 499021          | 0.4            |               | 5.2         | 5.2              | 0.3                     | 0.4                                    | 750                 | 380                            |
|                       |            | 7             | 310650 499024 | 499024          | 0.9            | SANDY SILT    | ۍ<br>ت      | 5.3              | 6.0                     | 0.6                                    | 8<br>8              | 280                            |
|                       |            | 6             | 310650 499024 | 499024          | 15.0           | SANDY SILT    | 5.1         | ص<br>4.          | -<br>0.                 | 0.5                                    | <u>8</u>            | 5                              |

i

| 6 | - | 310769                    | 499057 | 5.<br>O | 310769 499057 5.0 SANDY SILT                             | <b>8</b> . <b>9</b> | 6.7 | 0.3     | 0.1 | 6.8 6.7 0.2 0.1 5400 900  | 006<br>0   |
|---|---|---------------------------|--------|---------|--|---------------------|-----|---------|-----|---------------------------|------------|
|   | d | 310762                    | 499059 | 8.0     | 2 310762 499059 8.0 SANDY SILT 6.1 6.0 0.6 0.4 5000 1300 | 6.4                 | 6.0 | 9.0     | 4.0 | 6.1 6.0 0.6 0.4 5000 1300 | 1300       |
|   | 6 | 3 310761 498058 14.0 SAND | 499058 | 14.0    | 3 310761 499058 14.0 SAND 6.1 6.0 0.3 0.1 2500 1000      | 6.1                 | 6.0 | 6.<br>0 |     | 6.1 6.0 0.3 0.1 2500 1000 | 000        |
| 4 | - | 1 310885 498092 4.0 SAND  | 499092 | 4.0     | 10 1 310885 498092 4.0 SAND 7.2 7.1 0.3 0.3 2200 1400    | 7.2                 | 7.1 | 0.3     | 0.3 | 7.2 7.1 0.3 0.3 2200 1400 | 2 <u>1</u> |
|   | 8 | 310880                    | 499093 | 7.5     | 2 310880 488083 7.5 SANDY SILT 6.2 6.2 0.2 0.2 4500 550  | 6.2                 | 6.2 | 0.5     | 0.2 | 6.2 6.2 0.2 0.2 4500 550  | 550        |
|   |   | 000000                    | 40000K | 15.0    | 2 21000 40000 12 0 SANDY SILT 6.1 6.0 0.4 0.2 2300 720   | 6.1                 | 6.0 | 0.4     | 0.5 | 2300                      | 720        |

Fill

| LOCATION TRA | TRANSECT |         |        |               |                |            |                                 |       |                            |                       |  |                     |  |
|--------------|----------|---------|--------|---------------|----------------|------------|---------------------------------|-------|----------------------------|-----------------------|--|---------------------|--|
|              |          | STATION | LORAN  | COORD.        | DEPTH<br>(FT.) | BOTTOM     | TYPE                            | TEMP. | TEMP. (C.)<br>Surf. Bottom | WATE<br>(FT.<br>SURF. | WATER VEL.<br>(FT./SEC.)<br>SURF. BOTTOM | LI<br>(FT.<br>SURF. | LIGHT<br>(FT. CANDLES)<br>SURF. BOTTOM |
|              | =        | -       | 311488 | 311488 499369 | 21.0           | SILT       | ,<br>1<br>1<br>1<br>1<br>1<br>1 | 8.9   | 6.4                        | 0.2                   | 0.1                                      | 3200                | <u>\$</u>                              |
|              |          | 8       | 311473 | 311473 499375 | 23.0           | SILT       |                                 | 6.3   | 6.2                        | 0.5                   | 0.5                                      | 00<br>00            | 8                                      |
| ļ            |          | е       | 311472 | 499377        | 25.0           | SILT       |                                 | 6.9   | 6. 1                       | 0.2                   | 0.0                                      | 1300                | 630                                    |
|              | 12       | -       | 311626 | 311626 499449 | 21.0           | SILT       |                                 | 7.0   | 6.9                        | 0.5                   | 0.1                                      | ±                   | 8                                      |
|              |          | 2       | 311625 | 311625 499455 | 22.0           | SILT       |                                 | 7.0   | 6.9                        | 0.2                   | 0.1                                      | <u>*</u>            | 120                                    |
|              |          | С       | 311626 | 311626 499456 | 25.0           | SILT       |                                 | 7.0   | 6.9                        | 0.4                   | 0.0                                      | ÷<br>805            | 45                                     |
|              | 13       | -       | 311725 | 311725 499491 | 21.0           | SILT       |                                 | 6.8   | 6.7                        | 0.5                   | 0.2                                      | 38                  | -                                      |
|              |          | 2       | 311722 | 311722 499495 | 21.5           | SILTY CLAY | LAY                             | 8.9   | 6.7                        | 4.0                   | 0.1                                      | 9                   | -                                      |
|              |          | 6       | 311716 | 311716 499499 | 25.0           | SILTY CLAY | LAY                             | 8.9   | 6.7                        | 4.0                   | 0.2                                      | Š                   | -                                      |

| DETROIT RIVER | TRANSECT |         |               |        |                |               |                  |          | 3           | WATER 1                   | VEL.            |             | LIGHT   |
|---------------|----------|---------|---------------|--------|----------------|---------------|------------------|----------|-------------|---------------------------|-----------------|-------------|---------|
| DETROIT RIVER |          | STATION | LORAN         | COORD. | 0EPTH<br>(FT.) | BOTTOM TYPE   | TEMP<br>PE SURF. | . BOTTOM | S           | (FT./SEC.)<br>SURF. BOTTO | SEC.)<br>BOTTOM | (FT. (SURF. | CANDLES |
|               | <b>2</b> |         | 312578        | 499884 | 80<br>.53      | SAND          | 6.9              | }        |             | 9.0                       | 0.0             | \$          | 15      |
|               |          | 8       | 312579        | 499888 | 1.0            | SAND          | 4.9              |          | -           | 0.                        | 4.0             | 550         | 25      |
|               |          | c       | 312574        | 499692 | 18.0           | SANDY SILT    | 7.2              | 7.1      |             | 1.1                       | 0.1             | 808         | 2       |
|               | ž.       | -       | 312648        | 499938 | 0.0            | SANDY CLAY    | 7.8              | 7.8      |             | 9.4                       | 0.4             | £           | 0       |
|               |          | 7       | 312651        | 499933 | -1.0           | SANDY GRAVE   | EL 7.8           | 7.8      |             |                           | 0.4             | 35          | 0       |
|               |          | C       | 312650        | 498930 | 19.0           | SANDY SILT    | 7.8              | 7.7      |             | <u>;</u>                  | 0.9             | 120         | 0       |
|               | 91       | -       | 312842        | 489994 | 6.0            | SILT          | 6.0              | 8.3      |             | _                         | 0.1             | <u>5</u>    | 9       |
|               |          | 7       | 312844 499998 | 499998 | 0.6            | SILTY CLAY    | 60               | 8.1      | :<br>!<br>! | 0.4                       | 0.3             | 150         | 15      |
|               |          | 6       | 312850        | 499998 | 17.0           | SANDY SILT    | 7.8              | 7.7      | !<br>!<br>! | !                         | 1.3             | 5           | 0       |
|               | 17       | -       | 313066        | 500028 | 8.<br>15.      | SILT          | 7.3              | 7.2      |             |                           | 0.1             | 9009        | 29      |
|               |          | 8       | 313088        | 500032 | 12.0           | SILT          | 7.6              | 7.4      | 0           | 0.8                       | 0.5             | 650         | 20      |
|               |          | e       | 313109        | 500038 | 20.0           | SANDY SILT    | 7.4              | 7.4      | -           | 1.4                       | 0               | 1300        | 0       |
|               | 8        | -       | 314083        | 500675 | 7.0            | SILT          | 6.7              | 6.7      |             |                           | 0.4             | 570         | 48      |
|               |          | 7       | 314083        | 500674 | 0.0            | SILT          | 6.7              | 6.7      | Ö           |                           | 0.6             | 650         | 99      |
| •             |          | 6       |               | 500676 | 16.0           | SILT          | 60.              | 9.9      |             | 6                         | 0.2             | 4500        | 4       |
|               | 6        | - (     | 1             | 500806 | <b>6</b> .0    | SANDY SILT    | 6.7              | 9.9      |             |                           | 0.5             | 580         | 160     |
|               |          | 8       | 4156          | 500801 | 12.5           | SANDY SILT    | 6.6              | 9        |             | 0.9                       | <b>6</b> .0     | 3300        | 12      |
|               |          | e       | 1             | 500800 | 69.0           | GRAVELLY CLAY | LAY 6.4          | 6.3      |             | 0.7                       |                 | 3100        | 5       |
|               | 20       | -       | 314180        | 500886 | ان<br>ائة      | COBBLE        | 3.7              | 3.7      |             |                           | 0.7             | 2000        | 130     |
|               |          | 8       | 4163          | 500890 | 12.0           | SILTY CLAY    | 3.8              | 3.5      | -           | ı.                        | 0.8             | 2300        | 7       |
|               |          | n       | 314155        | 500886 | 19.0           | SANDY SILT    | 3.9              | 89.      | -           | g.                        | 0.7             | 2400        | 0       |
|               | 21       | -       | 314198        | 500943 | <b>80</b>      | SANDY SILT    | 3.7              | 3.6      |             | 2.1                       | <b>6</b> .0     | 2100        | 35      |
|               |          | N       | 314180 500939 | 500939 | 14.0           | SILTY CLAY    | 3.7              | 3.7      |             | 9.0                       | 4.0             | 3700        | s       |
|               |          | m       | 314172 500937 | 500937 | 20.0           | GRAVELLY CLAY | LAY 3.9          | 3.8      | -           | . 7                       | .3              | 2000        | 0       |

| MACROZOOBENTHOS PHYSICA | 7        | DATA-1984 | OCTOBER       | ER<br>R |                |              | *NOT          | *NOTE* (-) NUMBERS INDICATE MISSING DAT | UMBERS                  | INDICATI                                | E MISS          | ING DATA                         |
|-------------------------|----------|-----------|---------------|---------|----------------|--------------|---------------|---|-------------------------|---|-----------------|----------------------------------|
| LOCATION                | TRANSECT | STATION   | LORAN         | COORD.  | DEPTH<br>(FT.) | BOTTOM TYPE  | TEMP<br>SURF. | . (C.)<br>Bottom                        | WATER<br>(FT./<br>SURF. | WATER VEL.<br>(FT./SEC.)<br>URF. BOTTOM | LI<br>(FT. C    | LIGHT<br>. CANDLES)<br>F. BOTTOM |
| ST. CLAIR RIVER         | -        | -         | 308678        | 496880  | 0.9            | SAND         | 15.2          | 13.1                                    | 9.                      | 4.0                                     | <del>1</del> 00 | 750                              |
|                         |          | 8         | 308673        | 496882  | 11.0           | SANDY GRAVEL | 15.2          | 15. 1                                   | 4.8                     | 4.1                                     | 2000            | 8                                |
|                         |          | Ю         | 308672        | 496976  | 15.0           | SAND         | 15.2          | 15.1                                    | 6.1                     | +. +                                    | 1300            | 7.10                             |
|                         | 8        | -         | 308754        | 497134  | EC.            | SANDY SILT   | 15.2          | 15.1                                    | 0.5                     | 4.0                                     | 400             | 8                                |
|                         |          | 7         | 308752        | 497134  | 0.0            | SANDY SILT   | 15.2          | 13. 4                                   | 0                       | 1.1                                     | 2500            | 929                              |
|                         |          | 0         | 308755        | 497139  | 15.0           | GRAVEL       | 15.2          | 15.1                                    | <b>6</b> .              | 1.2                                     | 1500            | 670                              |
|                         | e        | -         | 309023        | 497389  | بر<br>بر       | GRAVEL       | 4.4           | 14.0                                    | 2.2                     | 2.1                                     | <del>2</del>    | 870                              |
|                         |          | 7         | 309020 497381 | 497381  | 13.0           | GRAVEL       | 14.1          | 14.0                                    | 2.4                     | 4.0                                     | 710             | 450                              |
|                         |          | 0         | 309016 49737  | 497374  | 17.0           | GRAVEL       | +.4           | 14.0                                    | 2.7                     | 2.7                                     | 670             | 430                              |
|                         | 4        | -         | 309580 498265 | 498265  | 0.4            | SANDY SILT   | 4.3           | 14.3                                    | 0.0                     | 0.2                                     | 670             | 460                              |
|                         |          | 7         | 570           | 1 💜 🛚   | 0.0            | SANDY SILT   | 4.4           | 14.3                                    | 2.0                     | 0.3                                     | 3000            | 650                              |
|                         |          | 0         | 309568        | 498257  | 15.0           | SAND         | 4.3           | 14.2                                    | 2.5                     | 1.2                                     | 1300            | 370                              |
|                         | an .     | -         | 309948        | 4       | 8.4            | SANDY SILT   | 14.2          | 14.1                                    | 4.2                     | 4.0                                     | 260             | 250                              |
|                         |          | 7         | 309942        | 498653  | 0.6            |              | 14.2          | 14.1                                    | 1.7                     | 0.2                                     | 480             | <b>58</b>                        |
|                         |          |           | 308939        | 498650  | 16.0           | SANDY GRAVEL | <b>+</b>      | 14.1                                    | 5.6                     | 2.6                                     | 8               | 75                               |
|                         | 9        | -         | 310122        | 498761  | 0.4            | SANDY SILT   | 14.3          | 14.2                                    | 0.2                     | 0.1                                     | \$              | 320                              |
|                         |          | 7         | 310121 498760 | 498760  | 0.0            | SANDY SILT   | 14.2          | 14.2                                    | <b>0</b>                | 0.2                                     | 650             | 120                              |
|                         |          | ю         | 310120        | 498761  | 13.0           | SANDY SILT   | 14.2          | 14.1                                    | 0.7                     | 0.5                                     | 350             | 13                               |
|                         | 7        | -         | 310376        | 498902  | 6.0            | SANDY SILT   | 24.5          | 14.3                                    | 0.7                     | 0.5                                     | 270             | 170                              |
|                         |          | 8         | 310376        | 498904  | 10.0           | SANDY SILT   | 14.4          | 14.2                                    | 0.7                     | 0.7                                     | 520             | 22                               |
|                         |          | c         | 310377        | 498902  | 16.0           | SANDY CLAY   | 14.2          | 14.1                                    | 4.                      | 1.1                                     | 580             | 140                              |
|                         | •        | -         | 310651        | 499021  | 3.0            | SANDY SILT   | 14.7          | 14.7                                    | 0.1                     | 0.1                                     | 210             | 150                              |
|                         |          | 7         | 310652        | 499025  | 7.5            | SANDY SILT   | 14.5          | 14.3                                    | -                       | 0.0                                     | 170             | 82                               |
|                         |          | n         | 310652        | 499027  | 13.0           | SANDY SILT   | 14.4          | 14.2                                    | 0.3                     | 0.0                                     | 900             | ō                                |

| <b>o</b> | - | 310769                    | 310769 499054 6.0 SAND | <b>0</b> .0 | SAND  | 14.4 | 14.4 14.3 0.2 0.1 250 110 | 0.5 | 0.1 | 250 | 5  |
|----------|---|---------------------------|------------------------|-------------|---|------|---------------------------|-----|-----|-----|----|
|          | 7 | 2 310770 499058 7.0 SAND  | 499058                 | 7.0         | 2 310770 499058 7.0 SAND 14.5 14.4 0.3 0.2 240 100      | 14.5 | 14.5 14.4 0.3 0.2 240 100 | 0.3 | 0.2 | 240 | 8  |
|          | 6 | 3 310771 498059 14.0 SAND | 499059                 | 0.4         | 3 310771 499059 14.0 SAND 14.5 14.3 0.3 0.3 270 14      | 14.5 | 14.5 14.3 0.3 0.3 270 14  | 0.3 | 0.3 | 270 | 4  |
| 9        | - | 310888 499088 4.0 SAND    | 499088                 | 4.0         | 10 1 310888 499088 4.0 SAND 14.5 14.4 0.3 0.3 95 63     | 14.5 | 14.5 14.4 0.3 0.3 85 63   | 0.3 | 0.3 | 93  | 63 |
|          | 4 | 2 310887 499090 8.0 SAND  | 499090                 | <b>6</b> 0  | 2 310887 499090 8.0 SAND 14.5 14.4 0.3 0.3 110 46       | 14.5 | 14.5 14.4 0.3 0.3 110 46  | 0.3 | 0.3 | 5   | 46 |
|          | 6 | 310888                    | 489085                 | 12.0        | 3 310888 499095 12.0 SANDY SILT 14.4 14.3 0.5 0.2 91 23 | 4.4  | 14.4 14.3 0.5 0.2 91 23   | 0.5 | 0.2 | -60 | 23 |

F-15

The second of th

| MACROZOOBENTHOS PHYSICAL | DS PHYSICA | NL DATA-1984     | 4 OCTOBER | E.R.                        |                |        |      | *NOT          | *NOTE* (-) NUMBERS INDICATE MISSING DATA | UMBERS                  | INDICAT                                  | E MISS              | ING DATA                               |
|--------------------------|------------|------------------|-----------|-----------------------------|----------------|--------|------|---------------|--|-------------------------|--|---------------------|--|
| LOCATION                 | TRANSE     | TRANSECT STATION | 1         | LORAN COORD.<br>Upper Lower | DEPTH<br>(FT.) | BOTTOM | TYPE | TEMP<br>SURF. | TEMP. (C.)<br>Surf. Bottom               | WATER<br>(FT.,<br>SURF. | WATER VEL.<br>(FT./SEC.)<br>SURF. BOTTOM | LI<br>(FT.<br>SURF. | LIGHT<br>(FT. CANDLES)<br>SURF. BOTTOM |
| LAKE ST. CLAIR           | IR 11      | -                | 311486    | 311486 499374               | 20.0           | SILT   |      | 14.3 14.1     | 14.4                                     | 4.0                     | 0.4                                      | 840                 | 8                                      |
|                          |            | 7                | 311476    | 311476 499376               | 21.5           | SILT   |      | 14.5 14.2     | 14.2                                     | 0.2                     | 0.1                                      | 1300                | 99                                     |
|                          |            | 6                | 311478    | 311478 499380               | 24.0           | SILT   |      | 14.3 14.1     | 14.1                                     | 0.2                     | 0.1                                      | 8                   | 27                                     |
|                          | 12         | -                | 311628    | 311628 499444               | 20.0           | SILT   |      | 14.8 14.4     | 14.4                                     | 0.2                     | 0.1                                      | 3200                | 160                                    |
|                          |            | 7                | 311623    | 311623 499451               | 23.0           | SILT   |      | 14.5          | 14.3                                     | 0.3                     | 0.5                                      | 3200                | 8                                      |
|                          |            | 6                | 311623    | 311623 499453               | 25.5           | SILT   |      | 6.4           | 14.5                                     | 0.3                     | 0.5                                      | 3300                | 98                                     |
|                          | 13         | -                | 311715    | 311715 489490               | 20.0           | SILT   |      | 14.9          | 14.5                                     | 0.3                     | 4.0                                      | 3100                | 160                                    |
|                          |            | 7                | 311715    | 311715 499499               | 23.0           | SILT   |      | 14.9 14.5     | 14.5                                     | O<br>32                 | 0.2                                      | 3300                | <del>1</del> 00                        |
|                          |            | 6                | 311720    | 311720 499501               | 28.0           | SILT   |      | 14.8 14.5     | 14.5                                     | 0.5                     | 1.1                                      | 4200                | 55                                     |

| MACAGEOGENING PRISICAL |          | UAIA-1864  |                | ¥               |                       |               |               | E. (-) E         | UMBERS        | *NOTE* (-) NUMBERS INDICATE MISSING DATA | E MISS              | ING DATA                         |
|------------------------|----------|------------|----------------|-----------------|-----------------------|---------------|---------------|------------------|---------------|--|---------------------|----------------------------------|
| LOCATION               | TRANSECT | STATION    | LORAN<br>UPPER | COORD.<br>LOWER | <b>ДЕРТН</b><br>(FT.) | BOTTOM TYPE   | TEMP<br>SURF. | . (C.)<br>Bottom | WATE<br>(FT., | WATER VEL.<br>(FT./SEC.)<br>SURF. BOTTOM | LI<br>(FT.<br>SURF. | LIGHT<br>. CANDLES)<br>F. BOTTOM |
| DETROIT RIVER          | *        | -          | 312581         | 499885          | 7.0                   | SANDY GRAVEL  | 14.9          | 14.8             | 4.0           | 0.3                                      | 8                   | 8                                |
|                        |          | 2          | 312575         | 499890          | 10.0                  | SANDY GRAVEL  | 14.8          | 14.7             | 0.9           | o. s                                     | 280                 | 57                               |
|                        |          | е          | 312574         | 499890          | 16.0                  | SAND          | 14.8          | 14.7             | 10.           | 9.0                                      | 430                 | 32                               |
|                        | î,       | -          | 312647         | 499938          | 6.0                   | SANDY GRAVEL  | 14.8          | 14.7             | 9.0           | 0.4                                      | 180                 | 8                                |
|                        |          | 7          | 312651         | 499936          | 10.0                  | SANDY CLAY    | 14.8          | 14.5             | 4.            | 0.8                                      | 230                 | 52                               |
|                        |          | 6          | 312648         | 489832          | 15.0                  | SANDY CLAY    | 14.8          | 14.8             | 2.0           | 0.9                                      | \$                  | 34                               |
|                        | 16       | -          | 312842 499994  | 488884          | 6.0                   | SILT          | 14.8          | 14.7             | 0.4           | 0.1                                      | 630                 | 110                              |
|                        |          | 7          |                | 499993          | 9.0                   | SILT          | 14.9          | 14.8             | 0.1           | 0.1                                      | 260                 | ō                                |
|                        |          |            | 312845 49998   | 499998          | 15.0                  | SANDY SILT    | 14.2          | 14.2             | 8.0           | 9.0                                      | 430                 | 63                               |
|                        | 17       | -          | 313065         | 500031          | 9.0                   | SILTY GRAVEL  | 14.9          | 14.9             | 0.2           | 0.1                                      | 320                 | 18                               |
|                        |          | 2          | 313101         | 500032          | 12.0                  | SAND          | 14.5          | 14.4             | 1.7           | 4.2                                      | \$                  | 40                               |
|                        |          |            | 313108         | 500037          | 16.0                  | SAND          | 14.4          | 14.3             | 9             | <b>8</b> .0                              | 900                 | 13                               |
|                        | 18       | -          | 314089         | 500681          | 6.0                   | SILT          | 14.8          | 14.8             | <b>0</b>      | 0.1                                      | 220                 | •                                |
|                        |          | 8          | 314089         | 500679          | 9.5                   | SILT          | 14.8          | 14.8             | 0.2           | 0.4                                      | 160                 | 28                               |
|                        |          | !<br>! (C) | 314089         | 500680          | 15.0                  | SANDY SILT    | 14.8          | 14.7             | 0.7           | 0.3                                      | 240                 | 38                               |
|                        | 6        | -          | 314162         | 500801          | 6.0                   | SILTY CLAY    | 14.5          | 14.5             | 0.3           | 0.0                                      | 330                 | 140                              |
|                        |          | 2          | 314157         | 500801          | 11.0                  | SANDY GRAVEL  | 14.7          | 14.7             | 8.0           | 4.0                                      | 55                  | 36                               |
|                        |          | 6          | 314155         | 500803          | 21.0                  | SANDY GRAVEL  | 14.5          | 14.5             | 4.            | 0.2                                      | 220                 | 67                               |
|                        | 50       | -          | 314179         | 500888          | £.                    | COBBLE        | 14.5          | 14.5             | 4.0           | 0.2                                      | 200                 | 300                              |
|                        |          | 7          | 314164         | 500886          | 12.0                  | GRAVELLY CLAY | 14.5          | 14.5             | 2.2           | 1.3                                      | 260                 | 43                               |
|                        |          | 6          | 314157         | 500891          | 20.5                  | SANDY CLAY    | 14.5          | 14.5             | 2.2           | 1.6                                      | 420                 | 09                               |
|                        | 21       | -          | 314199         | 500944          | 9.0                   | SANDY CLAY    | 14.5          | 14.5             | ٥.٦           | 0.2                                      | 220                 | 26                               |
|                        |          | 7          | 314181         | 500942          | 12.0                  | SILT          | 14.5          | 14.5             | 8.0           | 0.3                                      | 440                 | <del>1</del> 00                  |
|                        |          | 6          | 314180 500945  | 500945          | 20.0                  | GRAVELLY CLAY | 14.5          | 14.5             | 6.0           | 0.7                                      | 410                 | 40                               |
|                        |          |            |                |                 |                       |               |               |                  |               |  |                     |                                  |

APPENDIX G

Macrozoobenthos Physical Data - A Summary

C

رد دورو درو

Appendix G
Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

|          |             | Water<br>depth         | Frequency of occurrence of             | Mean co<br>v 100<br>(ft/s                    | ity  |
|----------|-------------|------------------------|--|--|--|
| Transect | Station     | (ft.)                  | substrate type*                        | Surface                                      | Bottom                                       |
| 1        | 1<br>2<br>3 | 6-10<br>10-14<br>15-17 | **Sa(3),SiGr(1)*** Sa(3),SaGr(1) Sa(4) | 1.7(1,6-1.8)<br>1.6(1.4-1.7)<br>1.8(1.6-1.9) | 1.1(1.0-1.3)<br>1.1(1.1-1.1)<br>1.3(0.9-1.9) |
| 2        | 1           | 3-6                    | SaSi(3),SaGr(1)                        | 0.7(.4-1.1)                                  | 0.6(0.1-1.0)                                 |
|          | 2           | 10-11                  | Si(1),GrCl(1),SaSi(1),Gr(1)            | 1.3(0.6-1.9)                                 | 1.0(0.4-1.4)                                 |
|          | 3           | 15-17                  | Gr(3),SaGr(1)                          | 2.3(1.8-3.0)                                 | 1.9(1.2-2.7)                                 |
| 3        | 1           | 6-7                    | SaGr(2),Gr(2)                          | 1.8(0.6-2.4)                                 | 1.9(1.1-2.3)                                 |
|          | 2           | 13-14                  | Gr(3),SaGr(1)                          | 2.0(1.2-3.1)                                 | 1.6(1.0-2.1)                                 |
|          | 3           | 17-20                  | Gr(3),Cl(1)                            | 2.1(1.7-2.7)                                 | 1.7(0.9-2.7)                                 |
| 4        | 1           | 3-5                    | SaSi(4)                                | 1.1(0.9-1.2)                                 | 0.6(0.2-1.1)                                 |
|          | 2           | 10-13                  | SaSi(2),Sa(1)Si(1)                     | 2.1(1.8-2.3)                                 | 1.1(0.3-1.8)                                 |
|          | 3           | 15-17                  | Sa(2),SaSi(1),SiGr(1)                  | 2.5(2.4-2.6)                                 | 2.0(1.2-2.8)                                 |
| 5        | 1           | 4-6                    | SaSi(3),Si(1)                          | 1.4(0.8-2.2)                                 | 0.4(0.2-1.0)                                 |
|          | 2           | 9-10                   | SaSi(3),SaCI(1)                        | 1.8(1.5-2.1)                                 | 1.0(0.2-1.6)                                 |
|          | 3           | 15-16                  | SaGr(2),Gr(2)                          | 2.8(2.6-3.0)                                 | 1.8(0.9-2.6)                                 |
| 6        | 1           | 4                      | SaSi(4)                                | 0.5(0.2-1.0)                                 | 0.3(0.0-1.0)                                 |
|          | 2           | 7-10                   | SaSi(4)                                | 0.8(0.4-1.2)                                 | 0.6(0.2-1.0)                                 |
|          | 3           | 11-15                  | SaSi(3)Si(1)                           | 1.2(0.7-1.4)                                 | 0.8(0.5-1.2)                                 |
| 7        | 1           | 5-7                    | SaSi(4)                                | 0.6(0.5-0.7)                                 | 0.5(0.4-0.6)                                 |
|          | 2           | 10-11                  | SaSi(2),SiCl(1),OrDe(1)                | 1.4(0.7-2.4)                                 | 1.2(0.1-2.4)                                 |
|          | 3           | 16-20                  | Cl(1),SiCl(1),SaCl(1),SaSi(1)          | 1.9(1.4-2.6)                                 | 1.2(1.1-1.3)                                 |
| 8        | 1           | 3-4                    | SaSi(2),SiCl(1),Cl(1)                  | 0.2(0.1-0.5)                                 | 0.2(0.1-0.5)                                 |
|          | 2           | 6-8                    | SaSi(3)Si(1)                           | 0.6(0.1-1.1)                                 | 0.3(0.0-0.6)                                 |
|          | 3           | 13-15                  | SaSi(3),Si(1)                          | 0.7(0.3-1.0)                                 | 0.4(0.0-0.8)                                 |

CONTINUED

2

Appendix G
Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

|          |         | Water<br>depth | Frequency of occurrence of | Mean cu<br>veloc<br>(ft/s | ity          |
|----------|---------|----------------|----------------------------|---------------------------|--------------|
| Transect | Station | (ft.)          | substrate type*            | Surface                   | Bottom       |
| 9        | 1       | 4-6            | SaS1(2),Sa(2)              | 0.3(0.2-0.4)              | 0.2(0.0-0.4) |
|          | 2       | 7-8            | SaS1(3),Sa(1)              | 0.6(0.3-1.0)              | 0.4(0.2-0.6) |
|          | 3       | 10-15          | Sa(2),SaS1(1),S1(1)        | 0.4(0.3-0.8)              | 0.6(0.1-1.1) |
| 10       | 1       | 3-4            | Sa(4)                      | 0.4(0.2-0.7)              | 0.3(0.2-0.3) |
|          | 2       | 7-8            | Sa(2),SaSi(2)              | 0.3(0.2-0.4)              | 0.2(0.1-0.3) |
|          | 3       | 10-15          | SaSi(4)                    | 0.4(0.2-0.6)              | 0.3(0.1-0.6) |
| 11       | 1       | 17-21          | S1C1(4)                    | 0.5(0.2-0.7)              | 0.2(0.0-0.5) |
|          | 2       | 20-23          | S1C1(4)                    | 0.2(0.2-0.3)              | 0.2(0.0-0.3) |
|          | 3       | 24-27          | S1C1(4)                    | 0.2(0.2-0.3)              | 0.1(0.0-0.2) |
| 12       | 1       | 20-22          | SiC1(4)                    | 0.2(0.2-0.3)              | 0.2(0.1-0.3) |
|          | 2       | 20-23          | SiC1(4)                    | 0.3(0.2-0.3)              | 0.2(0.1-0.2) |
|          | 3       | 25-27          | SiC1(4)                    | 0.2(0.1-0.3)              | 0.2(0.0-0.3) |
| 13       | 1       | 20-21          | SiC1(4)                    | 0.6(0.3-1.0)              | 0.2(0.0-0.4) |
|          | 2       | 20-23          | SiC1(4)                    | 0.4(0.3-0.5)              | 0.2(0.1-0.3) |
|          | 3       | 25-28          | SiC1(4)                    | 0.5(0.3-0.9)              | 0.4(0.0-1.1) |
| 14       | 1       | 6-8            | Sa(2),SaGr(1),Gr(1)        | 0.8(0.7-1.0)              | 0.4(0.0-0.7) |
|          | 2       | 10-11          | Sa(2),SaSi(1),SaGr(1)      | 1.0(0.7-1.5)              | 0.7(0.4-1.0) |
|          | 3       | 16-20          | Sa(2),Si(1),SaSi(1)        | 1.2(0.5-1.5)              | 1.0(0.6-1.4) |
| 15       | 1       | 6-8            | SaC1(2),SaS1(1),SaGr(1)    | 0.7(0.4-1.1)              | 0.6(0.4-0.9) |
|          | 2       | 10-11          | SaC1(2),SaS1(1),SaGr(1)    | 1.3(0.7-1.7)              | 0.7(0.4-0.9) |
|          | 3       | 15-19          | SaC1(2),SaS1(2)            | 1.6(1.0-2.0)              | 1.1(0.9-1.4) |
| 16       | 1       | 6              | Si(4)                      | 0.1(0.1-0.1)              | 0.1(0.1-0.1) |
|          | 2       | 7-11           | Si(3),SiCI(1)              | 0.2(0.1-0.4)              | 0.1(0.0-0.3) |
|          | 3       | 15-18          | SaSi(3),Si(1)              | 0.9(0.6-1.4)              | 0.8(0.5-1.3) |

CONTINUED

Appendix G
Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

|          |         | Water<br>depth | Frequency of occurrence of      | Nean cr<br>velor<br>(ft/ | ity          |
|----------|---------|----------------|---------------------------------|--------------------------|--------------|
| Transect | Station | (ft.)          | substrate type*                 | Surface                  | Bottom       |
| 17       | 1       | 9-10           | Si(1),SiCl(1),SaSi(1),SiGr(1)   | 0.3(0.2-0.4)             | 0.1(0.1-0.1) |
|          | 2       | 11-12          | Si(2),SaSi(1),Sa(1)             | 1.3(0,8-1.7)             | 0.8(0.5-1.2) |
|          | 3       | 16-20          | SaSi(2),Si(1),Sa(1)             | 1.4(1.3-1.6)             | 0.8(0.7-1.0) |
| 18       | 1       | 5-7            | \$1(4)                          | 0.4(0,3-0,4)             | 0.2(0.1-0.4) |
|          | 2       | 7-10           | \$1(4)                          | 0.3(0,2-0,4)             | 0.3(0.1-0.6) |
|          | 3       | 15-16          | \$1(3),\$a\$1(1)                | 0.9(0,7-1,0)             | 0.4(0.2-0.7) |
| 19       | 1       | 5-6            | SiC1(2),C1(1),SaS1(1)           | 0.4(0.3-0.5)             | 0.1(0.0-0.2) |
|          | 2       | 11-12          | SaGr(2),SaS1(1),Gr(1)           | 0.7(0.5-0.9)             | 0.7(0.3-1.0) |
|          | 3       | 19-22          | SaGr(2),GrC7(1),Gr(1)           | 1.3(0.7-1.9)             | 0.8(0.2-1.3) |
| 20       | 1       | 4-6            | Co(2),S1(1),Gr(1)               | 0.7(0.4-1.1)             | 0.4(0.2-0.7) |
|          | 2       | 12-14          | S1C1(1),GrC1(1),S1Gr(1),SaGr(1) | 1.7(1.4-2.2)             | 1.2(0.8-1.4) |
|          | 3       | 17-23          | C1(1),SaC1(1),SaS1(1),S1Gr(1)   | 1.9(1.6-2.2)             | 1.3(0.7-1.7) |
| 21       | 1       | 8-10           | SaS1(2),S1(1),SaC1(1)           | 0.8(0.5-1.2)             | 0.5(0.2-0.9) |
|          | 2       | 11-20          | C1(1),S1(1),S1C1(1),SaS1(1)     | 0.8(0.7-0.6)             | 0.4(0.3-0.5) |
|          | 3       | 18-25          | GrC1(2),C1(1),SaS1(1)           | 1.1(0.7-1.7)             | 0.8(0.5-1.3) |

<sup>\*</sup> Cl = clay, SiCl = silty clay, SaCl = sandy clay, GrCl = gravely clay, Si = silt, SaSi = sandy silt, Sa = sand, SiGr = silty gravel, SaGr = sandy gravel, Gr = gravel, Co = cobble, OrDe = organic debris.

<sup>\*\*</sup> Clay = very cohesive and malleable fine sediments
Silt = unconsolidate fine sediments
Sand = 0.062 - 2 mm
Gravel = 2-64 mm
Cobble = 64 mm

<sup>\*\*\*</sup>Frequency of occurrence, each station was sampled four times, twice in May and October.

## APPENDIX H

Macrozoobenthos ANOVA Tables

|                 | EUG1 | FYCRA           | • • • •      |         |
|-----------------|------|-----------------|--------------|---------|
| SCLACE          | CF   | SUM OF SCLARES  | PEAR SCLARE  | F VALUE |
| FCCEL           | 251  | 215225,58215788 | £73.42463425 | 23.50   |
| ERACA           | 504- | 18730.05685555  | 37.16439853  |         |
| FF8867767 +674. | 200  | 222640 44664242 |              |         |

ANALYSIS OF VARIANCE PROCECURE

| CCRRECTEC TCTAL       | 755  | 237560.44005747  |         |         |
|-----------------------|------|------------------|---------|---------|
| SCLACE                | ĈF   | ANÇVA SS         | F VALLE | FR F    |
| TRANSECT              | 20   | 61748.82715738   | E3.CE   | C.CCC1  |
| YEAR                  | 1    | £61.84545577     | 22.15   | C.COCI  |
| TPARSECTATEAR         | - 2C | - 167C6.217167CC | 22.4E - |         |
| HTATH                 | 1    | 5267.74200226    | 141.74  | C.COG1  |
| TP#ASECT+PCAT+        | 2C   | 42207.61072504   | 56.75   | C. CCC1 |
| YEAROPCATE            | - 1  | 20066.62267702   | £4C.45  | C.CCC1  |
| TRIASECT +YEDR+PCNT+  | 2C   | 22841.FEE27366   | 45.53   | C. CCC1 |
| STATICA               | i    | 1354.22222210    | 18.78   | C.COC1  |
| TRANSECTOSTATION      | 40   | 11362.90340162   | 7.66    | C.COC1  |
| YEAF4STATION          | 2    | 325.26736666     | 4.51    | C.C114  |
| TRANSEC+YEAR+STATICN  | 40   | 1527.83517548    | 5. C £  | C.CCC1  |
| PCPTH+STATICA.        | i    | 671.50546227     | 5.03    | C.COC1  |
| TRANSEC OPENTHOSTATIC | 40   | ICECT.CEC47CEE   | 7.27    | c.ccci  |
| YEAR+PORTH +STATION   | ĩ    | 420.00142273     | 5.65    | C.CC37  |
| TRANSOYEARAPENTASTAT  | 40   | 5567.62415126    | - 4.CI  | C.CCCI  |

R-SCLARE FR F R-SCLARE
0.001 0.521266 C.V. 71.1825 BECT MSE BUG1 PEAN-4.09626103 E.56414946

#### ANALYSIS OF VARIANCE PROCEDURE

| CEFENCENT_WARTAELE.     | eu c z    | TLRBELLARIA -               |            |                  |         |
|-------------------------|-----------|-----------------------------|------------|------------------|---------|
| SCLECE                  | CF        | SLM OF SCLARE               | S PEAR     | SCLARE           | F VALUE |
| PCCEL                   | 251       | 4249.6518622                | 16.5       | 31C4328          | 7.75    |
| EAFCR                   | . 504     | 1100.2563747                | £ 2.1      | E332614          |         |
| CCRRECTEC TCTAL         | 755       | 5350.0882365                | 5          |                  |         |
| SCLACE                  | C.F       | ANCVA S                     | F VALLE    | FR F             |         |
| TRANSECT                | 20        | 1237.9025728                | 26.25      | C-CCC1           |         |
|                         | 1         | 162.0222510                 |            | C.CCCi           |         |
| TRANSECT TEAR           |           | 270.46410251                |            | C. COC1          |         |
| PCATH<br>TRANSECT+PCATH | 1         | £1.753C24C1                 | 37.2e      | C.CCC1           |         |
| TRANSECT+PCATE          | 5 C       | 122.65054221                |            | 0.0001           |         |
| YEARADCATE              | . 1       | 26.52614900                 |            |                  |         |
| TRANSECT TYEAR THONTH   |           | 165.21374550                |            |                  |         |
| STATICA                 | ž         | 251-06521271                |            |                  |         |
| TRANSECTOSTATION        |           | 633.96124929                |            |                  |         |
| TRANSEC +YEAR+STATION   |           | 12.06715616                 |            |                  |         |
| PCATHASTATICA           |           | 224.77626656                |            |                  |         |
| TRANSEC+PENTHASTATIC    |           | 14.12652639                 |            | C.C4C1           |         |
| YEARANCHTH AST AT ICK   | 72        | 341.662E3E89<br>16.43269489 |            |                  |         |
| TRANSOVEAROPENTASTAT    | 46        | 205.65382741                |            | C.C239<br>C.COC1 |         |
|                         | FA        | F R-SCUARE                  | c          |                  |         |
| -                       | 0.000     | 1 0.754222                  | 56.2150    |                  |         |
|                         | #CCT PS   | E                           | ELG2 PEAR  |                  |         |
|                         | 1.4776082 | •                           | 2.62363892 |                  |         |

| CEFEACEAT_VARIABLE _BU   | /cs               | MEMER! INEA!   |            |         |         |
|--|-------------------|----------------|------------|---------|---------|
| SCLACE   | <b>13</b>         | SUM OF SOLARES | PEAN       | SCLAFE  | F VALUE |
| <b>FCCEL</b>   | 251               | 2564.35556242  | 15.8       | 7408758 | 6.80    |
| ERACR  |                   |                |            |         |         |
| CCFRECTEC TCYAL  | 755               | \$160.72474025 | -          |         |         |
| SCLRCF   | 2.7               | ANCLA CC       | E 44115    | FR F    |         |
| TRANSECT<br>YEAR<br>TRANSECT TYEAR   | žC -              | 1725.60526522  | 27.65      | C. CCC1 |         |
| YEAR   | 1                 | C.55278857     | C-41       | C.5232  |         |
| TRANSECT#YEAR  | 2C -              | 115.33882232   | 2.56       | C.CCG3  |         |
| PEATH<br>TRANSECT OPENTH<br>TEAROPENTH————————————————————————————————————   | 1                 | 458.05317751   | 213.41     | C.CCC1  |         |
| TRANSECT#PCNTH   | 5C                | 462.63745256   | 10.24      | C.CCC1  |         |
| YEAR+PCAT+=  | . 1 -             | 2.74560(21     | -1.16      | C.2783  |         |
| TPARSECT+YEAR+PCRT+  | şc                | 160.08223217   | 2.86       | C.CGC1  |         |
| STATICA  | ž                 | 14.72616716    | 3.16       | C.C435  |         |
| TRANSECT+STATION   | 40                | -155.77754500  | 2.14       | C. CCC1 |         |
| YEAR+STATICA   | 2                 | 2.83693415     | C. 61      | C.545C  |         |
| TRANSEC*YEAR*STATION   | 40                | 254.C4512884   | 2.72       | C.CCC1  |         |
| PCATE +STATION   | . 2 -             | 5.62772527     | 2.06       | C.1282  |         |
| IPANSEC+PCNT+*STATIC   | 40                | 262.44672502   | 2.03       | C.CCC1  |         |
| reaporthost at ICN   | ž                 | 12.22424166    | 2.64       | C.C722  |         |
| TRANSECTATION TRANSECTE AND TO THE AND | 40                | 155.13763365   | 2.05       | C.CCC2  |         |
|  | FR <sup>*</sup> F | R-SCUARE       | C.V.       |         |         |
|  | 0.0001            | 0.772061       | 67.5734    |         |         |
|  | FCCT PSE          |                | BLG3 FEAR  |         |         |
| 1  | .52773873         |                | 2.26(85715 |         |         |

#### ARALYSIS OF VARIANCE PROCECURE

| CEFEACENT_VARIABLE       | eug4 [        | NEMATOCA        | ~~ .       |         |         |
|--------------------------|---------------|-----------------|------------|---------|---------|
| SCLACE                   | CF            | SUM OF SQUARES  | PEAR       | SCLARE  | F VALUE |
| PCCEL                    | 251           | \$715.01EEC744  | 36.70      | 844146  | 8.97    |
| EPPCF                    | - 504         | - 2174.40271240 | 4.21       | 142511C |         |
| CCRRECTEC TCTAL          | 715           | 11650.22151584  |            |         |         |
| SCLACE                   | C.F           | ANCVA SS        | F VALLE    | FR F    |         |
| TRANSECT                 | ¿c            | 4071.42005067   | 47.19      | c.coc1  | *       |
| YEAR                     | 3             | 22.01822489     |            | C.CC59  |         |
| TREASECTAVEAR -          | . 20          | 366.03565622    | 4.24       | C.CCC1  | *       |
| PCATH                    | 1             | 519.CC527472    | 120.30     | C.COC1  |         |
| TPARSECT * PCNT P        | 50            | 261.55560016    | 4.20       | C.COC1  |         |
| YERBALCHIF               | 3             | 110.20528265    | 25.55      | C.CCC1  |         |
| TRANSECT *YEAR*PCNTH     | ŞC            | 172.25655645    | 2.00       | C. C064 |         |
| STATICA ,                | ž             | 133.71356725    | 15.5C      | C.CCCl  |         |
| TRANSECT#STATICA         | 40            | 25CG.C1526151   | 14.49      | C. COC1 |         |
| YEAR+STATICA             | i             | 12.45146455     | 1.45       | C.236l  |         |
| TRANSEC + YEAR + STATICA | 40            | 355.44161788    | 1.67       | C.CC13  |         |
| PCATH *ST&TICA           | ž             | 135.37722467    | 15.65      | C.CGC1  |         |
| TRANSEC+PENTH+STATIC     | 4C            | e11.57e72e7e    | 3.54       | c.cool  |         |
| YEZROPCATHOSTATICA       | 2             | 16.25366455     | 1.50       | C.1514  |         |
| TRANSOVEAF4PCNT4STAT     | 40            | 245.75273625    | 2.03       | C.COC3  |         |
|                          | FB F          | R-SCLARE        | C.v.       |         |         |
|                          | 0.0001        | C. £17127       | 39.6946    | •       |         |
|                          | ··· FCCT: PSE |                 | ELG4 FEAR  |         |         |
|                          | 2.07708717    |                 | 5.21205401 |         |         |

| AMAL SCI | CE      | LADI  | AAFE | FRECECLRE |
|----------|---------|-------|------|-----------|
| AMAL 121 | <br>C.F | AND I | -    | ナベししとししゃと |

| CEFEACENT_WARTABLE         | £0€5 [     | FIRUCINEA           |            |         |         |
|----------------------------|------------|---------------------|------------|---------|---------|
| SCLACE                     | CF         | SUP OF SQLARES      | PEAR       | SCLARE  | F VALUE |
| PCCEL                      | 251        | £4.67127656         | C.25       | 765449  | 4.16    |
| EPACA                      | - 564 -    | · · · · 21.19865C51 | - 0.00     | 150256  |         |
| CEFRECTEE TETAL            | 755        | 55.67016746         |            |         |         |
| SCLACE                     | EF         | ANCVA SS            |            | FR F    |         |
| TRANSECT                   | £C         | 20.17672765         | 16.20      | C.CCC1  |         |
| YEAR                       | 1          | C.13584558          |            |         |         |
| TRANSECTAYEAR              | 2C ~       | 1.464C65CE-         | 1.18       | C.2639  |         |
| PCATE                      | 3          | C.4547EE11          |            | C. CC65 |         |
| TRANSECT 4 PCNT +          |            | 2.22752620          |            |         |         |
| YEARONCHTH                 |            | C.C8486255          | 1.27       | C.2422  |         |
| TRANSECTOYEAROPCATE        | SC.        | 1.20052515          | C. 57      | C.4977  |         |
| STATICA                    | 40         | 5.06155516          | 4C.ES      | C. CCC1 |         |
| TRANSECTASTATION           | - 4C       | 21.68522791         |            |         |         |
| YEAR+STATICK               | -          | C.144C5242          | 1.16       | C.3132  |         |
| TRANSEC + YEAR + ST / TICK |            | 2.53385675          |            |         |         |
| PCNTH#STATICN              |            | C.C2154457          |            |         |         |
| TRANSEC+PCATH+STATIC       |            | 2.77866622          |            |         |         |
| YERROPENTHOSTATICK         |            | C.46753E55          | 3.78       | C.C236  |         |
| TRANSAYEARAPCHT4STAT       | 40         | 5.22558552          | 2.11       | C-CC01  |         |
|                            | FR F       |                     | c.v.       |         |         |
|                            | 0.0001     | C.674571            | 29.2956    |         |         |
|                            | ACCT PSE   |                     | BLGS FEAN  |         |         |
|                            | 0.24880225 |                     | (.64515512 |         |         |

#### ANALYSIS OF VARIANCE PROCECUPE

| CEFENCENT_VARIABLE                   | BUCE       | [ | L IGOCHAFTA     |            |            |         |
|--------------------------------------|------------|---|-----------------|------------|------------|---------|
| SCCECE                               | £ F        |   | SUP OF SCLARES  | PEAN       | SCLARE     | F VALUE |
| FCCEL                                | 251        |   | 136674.56460677 | \$53.20    | 511796     | 14.21   |
| ERRCR                                | · · · 5C4. | _ | 15622.57622156- | 38.53      | 3447663    |         |
| CCFRECTEC TCTAL                      | 755        |   | 158457.54CE2C32 |            |            |         |
| SCLRCE                               | CF         |   | ANCVA SS        |            | FR F       |         |
| TRANSECT                             | 2C         | • | 72255.56216351  | 52.52      | C-C001     |         |
| YEAR                                 | 1          |   | 62.17656667     | 1.62       | C.2033     |         |
| TRANSECT SYEAR                       |            |   | 4665.87815115   | £_CC       | C-C001-    |         |
| PCATH<br>TRANSECT#PCATH              | )          |   | \$54.712E7ECE   | 15.27      | C. CCC1    |         |
| TRANSECTOPOCATE                      | 2C         |   | 7765.25465266   | 5.50       | C.CCC1     |         |
| YEAROPCATO                           | 1          |   | 2544-00178501   | - 101.30   | C. CCC1    |         |
| THERSECT TYEAR TO CATE               | 20         |   | 10766.51658537  | 12,74      | C.COC1     |         |
| STATION                              | ž          |   | 2360-16007525   | 30.57      | C.COC1     |         |
| STATICN<br>TRANSECTOSTATICN          |            |   | 16276.46501154  | 11.74      | C.CCC1     |         |
| YEAR+STATICA<br>TRANSEC+YEAR+STATICA | 2          |   | 156.20070822    | 2.C1       | C.1356     |         |
| TREASECTYEER STATICA                 | 40         |   | 7426.57265546   | 4.77       | C.COC1     |         |
| PCATH+STATICATRANSEC+MCATH+STATIC    | - 2        |   | 262.63657310    | 2.27       | · C • C351 |         |
| TRANSEC * PENTE 4 STATIC             | 45         |   | 5215.27214225   | 3.41       | C.COC1     |         |
| 72 & B O P L N 1 P US I AT 1C N      | 7          |   | 487.34767748    | 4 12       | £ £655     |         |
| TRANSPYEARAPCHTASTAT                 | 40         |   | 4543.05014712   | 2.52       | C.C001     |         |
|                                      | FP         | • | R-SCUARE        | C.4.       |            |         |
|                                      | 0 -000     |   |                 | 43.7413    | •          |         |
|                                      | PCCT PS    | E |                 | BLGE MEAN  |            |         |
|                                      | 6.2397497  | 2 | 1               | 4.26513205 |            |         |

|                       |         | _     |                | ALYSIS OF VAL | RIANCE FREC | ECLFE   |
|-----------------------|---------|-------|----------------|---------------|-------------|---------|
| CEFENCENT_VARIABLE_EL | JG 7    | [     | LANAYUNKIA     | ·             | <del></del> |         |
| SCLFCE                | CF      |       | SUM OF SQLARES | PEAN          | SCLARE      | F VALUE |
| <b>PCCEL</b>          | 251     |       | 27655.07650067 | 110.19        | 5552550     | 16.61   |
| ERECR                 | 504 -   |       | 2244.6254556   | 6.63          | 3457508     |         |
| CCFRECTEC TCTAL       | 755     | . ~ - | 21CC2+1Ce25e77 |               |             |         |
| SCLACE                | CF      |       | ANOVA SS       | F VALLE       | FR F        |         |
| TRANSECT              | 20      |       | 10345.41230165 | 77.56         | c.ccc1      |         |
| YEZF                  | 1       |       | 274.52476723   |               | C.CCC1      |         |
| TRANSECTAYEAR         |         |       | -1162.41552160 |               | c.cgcı      |         |
| PENTH                 | 1       |       | E2.56627768    |               | C. C004     |         |
| 1 <i>P\$</i>          | 2 C     |       | 2510.75264830  | 16.52         | C. CCC1     |         |
| YEGGAPCATH            |         |       | - 132.CG311CCC |               | C.CCC1      |         |
| TRANSECT+YEAR+CNT+    |         |       | 430.21481106   | 2.24          | C.CCC1      |         |
| STATICA               | ž       |       | 164.54147411   | 7.\$1         | C. C004     |         |
| TRANSECT+STATION      | - 4C    |       | 6646.32215465  | 25.80         | C.COC1      |         |
| YEAR+STAYICK          | ĕ       |       | 266.46467753   |               |             |         |
| TRANSEC+YEAR+STATICA  |         |       | 1861.82725010  |               |             |         |
| PENTH +STATION        |         |       | 125.21156667   |               |             |         |
| TRANSEC+PENTH+STATIC  |         |       | 2725.43245648  | 16.58         | C.COC1      |         |
| YE&F*PCNTF*STATION    | ž       |       | E2.547315C5    |               | C.CC21      |         |
| 7#285+YE#F#PCBT#ST#T  | . 40    |       | 555,8ESC4278   | 2.11          | C.CCC1      |         |
|                       | FP      | F     | R-SCUARE       | C.V.          |             |         |
|                       | 0.00    | 01    | 0.852135       | 62.5581       |             |         |
|                       | FCCT N  | S E   |                | ELET PEAR     |             |         |
| 2                     | .575845 | 31    |                | 4.05136615    |             |         |

| CEFEAGEAT_VARISELE                   | PUG8          | +ARPACTICOIGA . |            |            |         |
|--------------------------------------|---------------|-----------------|------------|------------|---------|
| SCLFCE                               | EF            | SEM OF SCLARES  | PEAR       | SCLARE     | F VALUE |
| <b>PCCEL</b>                         | 251           | 2747.57577160   | 10.5       | 4651702    | 6.71    |
| E#6CP                                | 5C4.          | 622.67252252    | . 1.6      | 3228755    |         |
| CCFRECTEE TCTAL                      | 755           | 2570.24869512   |            | ••         |         |
| SCLRCE                               | CF.           | ANOVA SS        | F VALLE    | <b>F F</b> |         |
| TRASECT                              | 20            | 625.82427271    | 15.17      | C.CCC1     |         |
| 7E#R                                 | 1             | 162.54726525    | 100.44     | C.CGC1     |         |
| TRANSECT#YEAR                        | - 20          | 211.14556186    | €.47       | C.CCC1     |         |
| PCATE                                | 1             | 62.67161267     |            | C.CCC1     |         |
| TPANSECT+PENTH                       | 2 C           | 274.43686165    |            | C.COC1     |         |
| YE # F + P CAT +                     | . 1           | 32.46610094     |            | C.COC1     |         |
| TRANSECT + YEAR++CNT+                | 2 C           | 157.41227757    |            | C.CCC1     |         |
| STATICA                              | ž             | 50.81587757     |            | C.CCC1     |         |
| TRANSECTASTATICN —<br>YEAR+STATICN   | - 4 <u>C</u>  | ec2.77581748    |            | C.COC1     |         |
| 76#F451#11&K<br>TR&ASEC#YE&F#ST&TICK | 2             | 5.42188255      |            | C.C565     |         |
| CATH STATICA                         | 4C<br>2       | 175.22261650    |            | (.ccc1     |         |
| 1845EC4FCNT+4STATIC                  | 46            | 16-70276514     |            | C.C063     |         |
| YEAF PENTE STATION                   | -6            | 175.21660777    |            | C.CCC1     |         |
| TRANSOYEARANCHTASTAT                 | 46            | 11.70142057     |            | C.C285     |         |
|                                      |               |                 |            | C.CCC2     |         |
| •                                    | FR. F         | R-SCUARE        | C.V.       |            |         |
|                                      | C.CCC1        | C.765575        | 73.4755    |            |         |
|                                      | RCCT PSE      |                 | BLGE FEAN  |            |         |
|                                      | 1 - 2776 1009 |                 | 1.73661565 |            |         |

|                          | _          | AN:            | ALYSIS CF VA | RIANCE FRC | CECLRE  |
|--------------------------|------------|----------------|--------------|------------|---------|
| CEFENCENT VAFILELE       | EUGS       | CSTRACODA      |              |            |         |
| SCLACE                   | C F        | SLM OF SQLARES | PEAN         | SCLARE     | F VALLE |
| FCCEL                    | 251        | 4785.18956060  | 17.4         | 7087474    | 9.78    |
| ERACA                    | - 504      | SCC-36141147   | 1.7          | E643137    |         |
| CCRFECTED TCTAL          | 755        | 5285.55057207  |              |            |         |
| SCLACE                   | CF         | ANDVA SS       | F VALLE      | PR F       |         |
| TRANSECT                 | ZC         | 621.76447724   | 23.28        | C.CCC1     |         |
| YEZR                     | 1          | 14.58643362    | £.39         | C.CC39     |         |
| TRANSECT*YEAR            | · - 2C     | · 11C.17732521 | 3.€          | C.CCC1     |         |
| PCATH                    | 1          | 45.56884415    | 27.75        | C.CCC1     |         |
| TRANSECTOPCATE           | 50         | 560.73055631   | 26.85        | C.CCCI     |         |
| YEAROPCATE               | 1          | 4.01174245     | 2.25         | C.1346     |         |
| TRANSECT *YEAR * PCATE   | •••        | 155.76845466   | 4.47         | C.CCC1     |         |
| STATICA                  | ž          | 25.20790129    | 7.06         | C.CC1C     |         |
| TRANSECT +STATICA        |            | E17.65212445   | 11.44        | c.ccci     |         |
| YEAR+STATICA             | i          | 7.74550567     | 2.17         | C-1155     |         |
| TRANSEC + YEAR + STATICA |            | 227-22550260   | 4.72         | c.ccci     |         |
| PENTHOSTATION            |            | - 27.43100750  | 1C.4e        |            |         |
| TRANSEC + PCATH + STATIC | 4C         | ,729.22695656  | 10.21        |            |         |
| YEAR+PEATH+STATICA       | ž          | 11-17784841    | 3.13         |            |         |
| TREASAVEARAPERT AST AT   | · · 4C -   | 2E8.25E55647   | 4.C3         | C.CCC1     |         |
|                          | th t       | R-SCLARE       | C.V.         | ******     |         |
|                          | 0.0001     | C.829656       | E1.5765      |            |         |
|                          | PCCT MSE   |                | BLGS MEAN    |            |         |
|                          | 1.33657449 | ;              | 1.63643167   |            |         |

|  |           |          | ANA     | LYSIS CF VAI | RIANCE FRE | ECURE   |
|--|-----------|----------|---------|--------------|------------|---------|
| CEFENCENT VARIABLE                     | €U € 1 C  | CAPPARUS | ,       |              |            |         |
| SCLPCE                                 | CF        | SLM OF   | SQLARES | PEAN         | SCLARE     | F VALUE |
| PCCEL                                  | 251       | EEC2.3   | 1556702 | 35.00        | ESEECC     | 8.74    |
| ERRCR.                                 | . 5C4     | 2021.3   | 7504685 | 4.C1         | C66478     |         |
| CCFFECTEC TCTAL                        | 755       | 10823.6  | 51C23EE |              |            |         |
| SCLRCE                                 | CF        | Al       | NCVA SS | F VALLE      | FR F       |         |
| TRANSECT                               | 20        | 2509.8   | 7492E65 | 36.28        | C.COC1     |         |
| YEAR                                   | 1         | 16.5     | 1616615 | 4.22         | C.C4C5     |         |
| TRANSECTOYEAR                          | ac.       | 263.20   | £2216C5 | 4.53         | C.CCC1     |         |
| PCATH                                  | 1         | 425.8    | 1505515 | 105.67       | C.CCC1     |         |
| TRANSECT *PCATE                        | āC        | 614.51   | 1636356 | 7.67         | C.CCC1     |         |
| YEARAPCATA                             | 1         | 16.10    | :657EEC | 4.03         | C.C452     |         |
| TRANSECT + YEAR + PCATE                | 20        |          | 645753  | E.67         | C.CCC1     |         |
| STATICA                                | ž         |          | 1752456 | £2.51        | C.COC1     |         |
| TRANSECT+STATICA                       | 46        | 1352.75  |         | E. 44        | C.CCC1     |         |
| TEAR+STATICA                           | ź         |          | 666464  | 5.07         | C.CC66     |         |
| TRANSEC +YEAR+STATION<br>PCAIL+STATION | 40        |          | 399569  | 2.02         | C. CCC3    |         |
| TRANSECOPENTE OSTATIC                  | ě         |          | E55936_ | 6.EC         | C-COC2     |         |
| YEAF+PCATH+STATICA                     | 40        |          | Elcecc  | 5. 81        | C.CCC1     |         |
|  | ž         |          | 583929  | 1.23         | C.2932     |         |
| TRANSAYEARAPCATASTAT                   | 40        | 353.23   | 257125  | 2.20         | C.CCC1     |         |
|  | FR        | F R-50   | LARE    | C.,v.        |            |         |
|  | G.CCC     | 1 C.E    | 12245   | 64.5325      | •          |         |
|  | RCCT PS   | E        |         | BUGIC PEAR   |            |         |
|  | 2.CC26644 | ž        | 3       | 2.06420366   |            |         |

| ANALYSIS CF | VARIANCE | FRCCECURE |
|-------------|----------|-----------|
|-------------|----------|-----------|

| CEFENCENT VARIABLE -    | eu G 1 1 - [ | PYALLELA       |            |                   |         |
|-------------------------|--------------|----------------|------------|-------------------|---------|
| SCLACE                  | CF           | SUM OF SQUARES | PEAN       | SCLARE            | F VALUE |
| FCCEL                   | 251          | 1616.11456764  | 6.43       | <b>e7C5C5</b>     | 6.68    |
| EPACA                   | 5G4          | 485.85476860   | C.96       | 355756            |         |
| CCFRECTEC TCTAL         | 7::          | 2361.56572565  |            |                   |         |
| SCLRCE                  | CF           | 22 AVONA       | F VALUE    | FR F              |         |
| TRANSECT                | 20           | 420.24667654   | 22.32      | C.CCC1            |         |
| YEAR                    | 1            | 5.08245545     | 5.27       | C.C221            |         |
| TRANSECT +YEAR          | 20           | 52.41215(41    | 4.65       | <pre>c.ccc1</pre> |         |
| PEATH                   | 1            | C.8678755C     |            | C.3432            |         |
| TRANSECT *PCATE         | 20           | £5.6156E572    | 4.44       | c.cccı            |         |
| YEAROPENTH              | 1            | 6.76276439     | 7.02       | C.CC83            |         |
| TRANSECT + VEAR + PCATE | 20           | 90.65672442    | 4.70       | c.ccci            |         |
| STATICA                 | ä            | EC.5273E13E    | 41.57      | C.CCC1            | •       |
| TRANSECT+STATICA        | 4C           | 721.11215544   | €.33       | C.CGC1            |         |
| YEAR+STATICK            | i            | 4.55655675     | 2.36       | C.C951            |         |
| TRANSEC+YEAR+STATICN    | 40           | 53.05655553    | 1.36       | (.662             |         |
| PCATH+STATICA           | ě            | 2.65642375     | 1.50       | C.1512            |         |
| TRANSECOPENTHOSTATIC    | 40           | 262.50040035   | 6.81       | c.coci            |         |
| YEAR + PCATH+STATION    | ž            | 4.15264756     | 2.17       | C.1148            |         |
| TRANS-YEAR-PONT-STAT    | 4C           | 173.22313343   | 4.45       | C.C001            |         |
|                         | FP 1         | F R-SCLARE     | C.V.       |                   |         |
|                         | 0.000        | 1 0.766657     | 71.5867    |                   |         |
|                         | PCCT PSI     | E              | ecell MEAN |                   |         |
|                         | 0.9816337    | 7              | 1.27145277 |                   |         |

#### ANALYSIS OF VARIANCE PROCECURE

| CEFENCENT. VARIABLE    | 60615      | CH IRONOM ICAE     |                    |        |         |
|------------------------|------------|--------------------|--------------------|--------|---------|
| SCLECE                 | CF         | SUM OF SQLARES     | MEAN               | SCLARE | F VALLE |
| <b>▶CCEL</b>           | 251        | 24506.42276006     | 55.22              | 277992 | 20.01   |
| ERECR                  | 504        | 2455.67111524      | 4.95               | 566492 |         |
| CCFFECTEC TCTAL        | 755        | 27406.05467530     |                    |        |         |
| SCLFCE                 | CF         | ANOVA SS           | F VALLE            | FR F   |         |
| TRANSECT               | āc         | 5562.77572600      | 56.41              | c.ccc1 |         |
| YEZA                   | i          | 417.CECE7622       | £4.C5              | c.ccc1 |         |
| TRANSECTOVEAR          | āČ         | 1612.26867445      | 16.26              | C.COCI |         |
| PENTH                  | 1          | 394.77646252       | 75.60              | C.CCC1 |         |
| TREASECTOPENTH         | 2 Č        | 1271.75548526      | 12.82              | C.COC1 |         |
| <b>YEZR*PCATF</b>      | 1          | 1034.65077047      | 208.65             | C.CCC1 |         |
| TRANSECT TEARTPENTH    | SC.        | 1222.25416776      | 13.44              |        |         |
| STATICA                | ž          | 1047.25652693      |                    | C.CCC1 |         |
| TREASECT+STATICA       | 4Č         | 4121.17475265      | 26.77              | C.CCC1 |         |
| YEAR+STATICK           | ž          | 5.55812155         | C+56               | C.5714 |         |
| TRANSEC+YEAR+STATION   | 40         | 1005.81767266      | 5.09               | c.ccci |         |
| PCATHOSTATICA          | à          | . 56.62825276      | - 5.71             | C.CC35 |         |
| TRANSEC +PCATH +STATIC | 40         | 2057.64550142      | 10.57              | c.ccc1 |         |
| YEAR+PCATH+STATICA     | à          | 59.40657516        | 10.02              | C.COC1 |         |
| TRANSOYEAROPENTASTAT   | - 40       | · · · E41.E4373266 | 4.24               | C.COC1 |         |
|                        | FP F       | R-SCUARE           | C.V.               |        |         |
|                        | 0.0001     | C.5CE751           | 31.8651            | *      |         |
|                        | FCCT PSE   |                    | BUG15 MENY         |        |         |
|                        | 2.22703052 |                    | <b>6.</b> 5EE527E6 |        |         |

| ANALYSIS | CF | VARIANCE | FRCCECLFE |
|----------|----|----------|-----------|
|----------|----|----------|-----------|

| CEFENCENT VARIABLE   | 80613     | CAENIS |             |            |          |         |
|----------------------|-----------|--------|-------------|------------|----------|---------|
| SCLFCE               | CF        | SLP    | OF SQLARES  | - PEA      | SCLARE   | F VALUE |
| PCCEL                | 251       | 223    | 7.76566466  | 5.         | 31302313 | 14.59   |
| ERRCR                | 504       | 22     | 1.62964558  | C.         | £3£154C6 |         |
| CCFRECTEC TCTAL      | 755       | 365    | 19.39925044 |            |          |         |
| SCLACE               | CF        |        | ANOVA SS    | F VALUE    | FR F     | •       |
| TRANSECT             | 20        | 73     | 5.65250573  | \$7.96     | c.ccc1   |         |
| YEAR                 | ī         |        | 2.14728564  |            |          |         |
| TRANSECT +YEAR       | 2 C       | 13     | 5.20158044  |            |          |         |
| PCATH                | 1         |        | 6.75614405  |            |          |         |
| TPANSECT*PCATE       | 2C        |        | 7.85426658  |            |          |         |
| YEAR+PCATE           | . 1       | 6      | 2.47606432  |            |          |         |
| TRANSECT+YEAR+PCATH  | 20        |        | C.C56722C5  |            |          |         |
| STATICA              | ž         |        | 6.23462259  |            |          |         |
| TRANSECTASTATICA     |           | 36     | 5.65588615  |            |          |         |
| YEAR+STATICN         | ż         |        | 2.09000738  |            | C.1955   |         |
| TRANSEC+YEAF+STATION | 40        | 13     | C.CECC1662  |            | c.ccci   |         |
| PCNTHASTATION        | 2         |        | C.2472264C  |            | C.824C   |         |
| TRANSEC+PCNT++STATIC |           | ??     | C.94164C32  |            | C.COG1   |         |
| YE&F&PCATH#ST&TICA   | ĩ         |        | 5.36452623  |            | C. CCC1  |         |
| TRANSAVEARAMENTASTAT | 40        | - 11   | E. EZ46E655 | 4.66       | C.COC1   |         |
|                      | FP        | F      | R-SCLARE    | c.v.       |          |         |
|                      | 0.000     | )1     | C.E75C55    | \$2.7637   |          |         |
|                      | ACCT PS   | E      |             | BUG13 PEAN |          |         |
|                      | 0.7988454 | 15     |             | 1.51343225 |          |         |

#### ANALYSIS OF VARIANCE PROCECURE

|                      |           |     |                |               |                  | <del>-</del> |
|----------------------|-----------|-----|----------------|---------------|------------------|--------------|
| CEFENCENT VARIABLE   | EU € 14   | F   | XACENTA        |               |                  |              |
| SCLRCE               | CF        |     | SUM OF SQUARES | PEAR          | SCLAPE           | F VALUE      |
| FCCEL                | 251       |     | £2E3.791C3163  | 33.00         | 315152           | 32.72        |
| ERFCR                | 504       |     | 508.27476775   | 1.00          | 268C13           |              |
| CCRRECTEC TCTAL      | 755       |     | E752.16581542  |               |                  |              |
| SCLPCE               | C.F       |     | ANOVA SS       | F VALLE       | FR F             |              |
| TRANSECT             | 20        |     | 4190.29128446  | 207.71        | C.C001           |              |
| YEAR                 | ī         |     | 45.65467265    | 45.27         | C.CCC1           |              |
| TRANSECT+YEAR        | 2Ĉ        |     | 222.53042325   | 16.01         | C.CCC1           |              |
| PENTH                | 1         |     | 148.51604546   | 147.24        | C. COO1          |              |
| TRANSECTOPENTE       | 20        |     | 541.66614135   | 46.68         | C.C001           |              |
| YEAR+PCNTH           | 1         |     | 23.83058114    | 23.63         | C.CCC1           |              |
| TRANSECTOYEAROPCATE  | 20        |     | 1108.26164146  | 54.54         | C.COC1           |              |
| STATICN              | 2         |     | C.95474111     | C-47          | C.6232           |              |
| TRANSECT+STATICA     | 40        |     | 621.84C66276   | 15.41         | C.CCC1           |              |
| YEAR+STATICK         | ž         |     | 5.00141555     | 4.46          | C. C12C          |              |
| TRANSEC+YEAR+STATION |           |     | 194.45295427   | 4.52          | C.CCC1           |              |
| PCATH+STATICK        |           |     | 7.42540554     | 3.68          | C.C259           |              |
| TRANSEC+PENTH+STATIC |           |     | 255.64611645   | £. £2         | C.CCC1           |              |
| YEAR+PENTH+STATION   |           |     | 22.66315564    | 11.73<br>7.67 | C.CCC1<br>C.CGC1 |              |
| TRANS-YEAR-PCAT+STAT | ' 4C      |     | 265.25416420   | 1.01          |                  |              |
|                      | 5 B       | F   | R-SCUARE       | C.V.          |                  |              |
|                      | 0.000     | 1   | C.942179       | 36.1575       |                  |              |
|                      | PCCT PS   | S E |                | BLG14 PEAN    |                  |              |
|                      | 1.0043306 | 59  |                | 2.77765853    |                  |              |

| , <del>-</del>                       | ANALYSIS OF VARIANCE PROCEDURE |                           |              |   |         |  |  |
|--------------------------------------|--------------------------------|---------------------------|--------------|---|---------|--|--|
| CEFENCENT VARIABLE                   | EUG15                          | CECETIS                   |              |   |         |  |  |
| SCLECE                               | CF                             | SUM OF SQUARES            | PEAN         | SCLARE                                  | F VALUE |  |  |
| FCCEL                                | 251                            | 255.47455240              | 1.15         | 312571                                  | 7.35    |  |  |
| EARCA                                | 504                            | 81.865CC555               | C.16         | 243650                                  |         |  |  |
| CCFFECTEC TCTAL                      | 755                            | 281.34355535              |              |   |         |  |  |
| SCLPCE                               | CF                             | ANCVA SS                  | F VALLE      | FR F                                    |         |  |  |
| TRANSECT                             | 20                             | 76.15578208               | 23.44        | c.ccc1                                  |         |  |  |
| YEAR                                 | 1                              | 1.54426765                | 5.51         | C.C022                                  |         |  |  |
| TRANSECT *YEAR                       | · 20                           | 5.53686666                | 2.54         | C.CCC1                                  |         |  |  |
| PENTH                                | 1                              | C.11515912                | C.71         | C.4CC2                                  |         |  |  |
| TRANSECTOPENTE                       | 2C                             | 16.51737652               | 5.62         | C.CCC1                                  |         |  |  |
| YEARAPCATH                           | . 1                            | C.C755E661                | C.47         | C.4943                                  |         |  |  |
| TRANSECT + YEAR + PCATE              | 5 C                            | 10.25467766               | 2.17         | C.COC1                                  |         |  |  |
| STATICA                              | i                              | 21.20272649               | 6:.26        | c.ccc1                                  |         |  |  |
| TRANSECT+STATICN                     | 4 <u>C</u>                     | 53.35220645               | 14.37        | C.CCC1                                  |         |  |  |
| YEARASTATICA<br>TRANSECAYEARASTATICK | ž .                            | 2.7655660                 | €.51<br>2.3€ | C.COC2                                  |         |  |  |
| PCATHOSTATICA                        | 4C                             | 15.45413254<br>C.55215754 |              | C.1626                                  |         |  |  |
| TRANSEC +PCNT++STATIC                |                                | 23.66725512               | 5.16         | C.CCC1                                  |         |  |  |
| YEAR OPENTHOSTATION                  |                                | 2.10523137                | 6.48         | C.CO17                                  |         |  |  |
| TRANSAYEARAPCATASTAT                 |                                | 12.61452575               |              | C. CGC2                                 |         |  |  |
|                                      |                                | F R-SCLARE                | C.V.         | *************************************** |         |  |  |
|                                      | 0.000                          | 1 0.785214                | 25.5257      |   |         |  |  |
|                                      | ACCT PS                        | E                         | BLGIS PEAN   |   |         |  |  |
|                                      | 0.4030366                      | c                         | 1.0154253E   |   |         |  |  |

|  |            | ANALYSIS OF VARIANCE PROCECUPE |                |                  |       |  |
|--|------------|--------------------------------|----------------|------------------|-------|--|
| CEFEACENT VARIABLE   | EUE 16     | CHELMATOPSYCHE                 |                |                  |       |  |
| SCLACE   | CF         | SLF OF SCLARES                 | - PEAR         | SCLARE           |       |  |
| PCCEL  | 251        | 4122.65155121                  | 16.46          | 570514           | 13.23 |  |
| EPACR  | 504        | 627.15426521                   | 1.24           | 443307           |       |  |
| CCPRECTEC TCTAL  |            | 4760.08625652                  | -              |                  |       |  |
| SCLACE   | CF         | AND VA SS                      | F VALLE        | FR F             |       |  |
| TRANSECT<br>YEAR   | 2C 1       | 1737.1641C362<br>1C.665C5551   | 65.EC          | C.COC1<br>C.CO33 |       |  |
| TPARSECT+YEAR  | - 2C<br>1  | 75.45162714<br>143.54633610    | 3.C3<br>115.25 | C.CCC1           |       |  |
| TRANSECT YEAR TRANSECT *YEAR PCATH TRANSECT *PEAR TRANSECT *PEAR STATICA TRANSECT *STATICA TRANSECT *STATICA TRANSECT *STATICA ***TRANSECT ****TRANSECT ***TRANSECT ***TRANSECT ****TRANSECT ****TRANSECT ******TRANSECT ****TRANSECT ****TRANSECT ****TRANSECT ****TRANSECT * | 2C<br>1    | 652.65CE5627<br>15.6215E224    | 34.26          | C.CGG1<br>C.CGC4 |       |  |
| TRANSECT +YEAR+PCATH<br>STATICA  | 20         | 26.688211C7<br>42.82617188     | 1.55<br>17.61  | C.C593           |       |  |
| TRANSECTOS FATICA<br>YEAROSTATICA<br>TRANSECOVERROSTATICA  | · = · 4C   | 1.3852556C                     | 8.23<br>C 56   | C. 5735          |       |  |
| ACATAUSTATICA  |            |                                |                | C.4031           |       |  |
| TRANSECOPENTHOSTATIC VEAROPENTHOSTATICA  | ž          | 3.49021522                     | 1.40           | C.247C           |       |  |
| .Тявь с с с с с с с с с с с с с с с с с с с  |            | R-SCLARE                       |                |                  |       |  |
|  | 0.0001     | C.868239                       | 70.0012        |                  |       |  |
|  | PCCT ▶SE   |                                | BLG16 FEAR     |                  |       |  |
|  | 1.11554160 |                                | 1.55260235     |                  |       |  |

|   |            | ECLPE |                      |            |             |         |
|---|------------|-------|----------------------|------------|-------------|---------|
| CEFENCENT VARIABLE BU                   | <b>617</b> | Ŀ     | YCROPSYCHE           | •          |             |         |
| SCLFCE                                  | CF .       |       | SUM OF SCLARES       | PEAR       | SCLARE      | F VALUE |
| PCCEL                                   | 251        |       | 1525.20162650        | é.C7       | 685572      | 8.56    |
| ERFCR                                   | 504        |       | 257.78585620         | C.10       | 550059      |         |
| CCFRECTEC TCTAL                         | 7::        |       | 1663.05172511        |            |             |         |
| SCLACE                                  | CF         |       | ANCVA SS             | F VALLE    | PR F        |         |
| TRANSECT                                | 2C         |       | 405.27207552         | 28.54      | C.CCC1      |         |
| YEAR                                    | 1          |       | 16.60205071          | 22.67      | C.COC1      |         |
| TRANSECTOYEAR                           | 2C         |       | 47.51666102          | 3.35       | C.CCC1      |         |
| PCPTH                                   | 1          |       | E5.C52CE435          | 115.81     | c.coc1      |         |
| TP#RSECT+PCRT+                          | 2C         |       | 267.77886556         | 14.63      | C • C C C L |         |
| YEAROPCATE -                            | 1          |       | 10.20315720          | 14.27      | C.CCC2      |         |
| TRANSECT+YEAR+PCNT+                     | 2C         |       | 72.61624714          | 5.18       | C.CCC1      |         |
| STATICA                                 | Ž          |       | 5.02725430           | 3.55       | C.C255      |         |
| TRANSECTISTATION                        | 4C         |       | 247.27177214         |            | C.CCC1      |         |
| YEAR+STATICA                            | ž          |       | 5.02640858           | 3.54       | C.C297      |         |
| TRANSEC+YEAR+STATION                    | 40         |       | 42.12(26215          | 1.48       | C.C315      |         |
| PCATASTATICA                            | į          |       | 16.24473667          | 12.85      | C.CGC1      |         |
| TRANSECOPENTHOSTATIC VEAPOPENTHOSTATICN | 4Ç         |       | 273.46726036         | 5.63       | C. CG01     |         |
| TRAFSOYEAROP(ATOSTAT-                   | i          |       | 2.63636146           | 1.66       | C.157C      |         |
| ibbe3-ifbb-b(01-21%-                    | 4C         |       | E5.252165 <u>5</u> 7 | 3.((       | c.ccc1      | •       |
|   | FR         | F     | R-SCUARE             | C.v.       |             |         |
|   | 0.00       | 01    | 0.865555             | 64.0517    |             |         |
|   | PCCT P     | SE    |                      | BUG17 MEAN |             |         |
| 0                                       | .842555    | 96    |                      | 1.21520886 |             |         |

|                         |               | ANALYSIS OF VARIANCE PROCECURE |               |        |  |  |  |
|-------------------------|---------------|--------------------------------|---------------|--------|--|--|--|
| CEFENCENT VARIFELE E    | UG16 [        | CAR INA                        |               |        |  |  |  |
| SCLFCE                  | CF            | SLP OF SGLARES                 | FEAR SCLARE   | F VACU |  |  |  |
| <b>PCCEL</b>            | 251           | 44E.CE2C2252                   | 1.78518734    | 3.7    |  |  |  |
| EARCA -                 | 5G4           | 237.56232665                   | C.47218916    |        |  |  |  |
| CCFRECTEC TCTAL         | 755           | eee.Ces36142                   |               |        |  |  |  |
| SCLPCE                  | CF            | ANOVA SS                       | F VALLE FR F  |        |  |  |  |
| TRANSECT                | 20            | 104.26542029                   | 11.64 6.6061  |        |  |  |  |
| YEAR                    | 1             | 0.00661100                     | C.C1 C.SC45   |        |  |  |  |
| TRANSECT 4YEAR          | 2C            | - 17.868C4955                  | 1.89 - C.C113 |        |  |  |  |
| PCATH                   | 1             | C.C6475867                     | C.14 C.7113   |        |  |  |  |
| T##NSECT+PCNT+          | 2C            | 27.54111482                    | 2.56 C.CCC1   |        |  |  |  |
| YEARARCATH              | <del></del> 1 | 2.31007322                     | 4.89 C.C274   |        |  |  |  |
| IAARSECT+YEAR+FCRT+     |               | 55.96523669                    |               |        |  |  |  |
| STATICA                 | ž.            | 4.56216657                     |               |        |  |  |  |
| TRANSECTASTATICA        |               |                                | 3.25 C.CUCI   | · -    |  |  |  |
| YEAR STATICA            |               | 4.05144248                     | 4.25 C.C142   |        |  |  |  |
| TRANSECOVEAROSTATICN    | 4C            | 24.21651175                    |               |        |  |  |  |
| ACATHOSTATICA           |               |                                | 6.07 C.CO25   |        |  |  |  |
| TRANSEC+PENTH+STATIC    |               | 44.46755133                    | 1.40 0.2022   |        |  |  |  |
| YEAR PEATH STATICA      | 4             | 1.51427652                     | 2 42 C COCI   | _      |  |  |  |
| TRANS TYBER TPCNT-STAT- |               |                                |               | •      |  |  |  |
|                         | FR F          | R-SQUARE                       | C.V.          |        |  |  |  |
|                         | 0.0001        | C.653119                       | 54.1366       |        |  |  |  |
|                         | RCCT PSE      |                                | BLEIE PEAN    |        |  |  |  |
|                         | 0.68716022    |                                | 1.26526146    |        |  |  |  |

#### ANALYSIS OF VARIANCE PROCECURE

| CEFENCENT- VARIABLE.   | EU @ 1 S | PHYSA       |                   |            |         |         |
|------------------------|----------|-------------|-------------------|------------|---------|---------|
| SCLRCE                 | CF       | SUM O       | F SQLARES         | - PEAR     | SCLARE  | F VALUE |
| PCCEL                  | 251      | <b>47</b> 0 | .02300829         | 3.1        | 6467334 | 6.54    |
| EPACH                  | 504      | 257         | .77025251         | c.:        | 5081419 |         |
| CCPRECTEE TETAL        | 755      | 1267        | .00336220         |            |         |         |
| SCLFCE                 | CF       |             | ANOVA SS          | F VALLE    | FR F    | •       |
| TRANSECT               | 20       |             | .54261761         | 25.35      |         |         |
| YEAR                   | 1        |             | . C5 6 1 6 5 5 6  |            |         |         |
| TRANSECTOYEAR          | - 20     |             | .61732263         | 3.05       |         |         |
| PCPTH                  | 1        |             | .17236656         |            |         |         |
| T##ASECT#PCATE         | 20       |             | .56676556         | 3.97       |         |         |
| <b>YEAR*PCATH</b>      | 1        |             | .90024832         | 30.30      | C.CCC1  |         |
| TRANSECT +YEAR + PCATE | 20       |             | .53217357         | 5.16       |         |         |
| STATICA                | ã        |             | .44145645         | 72.31      | C.CGC1  |         |
| TRANSECT +STATICN      | 40       |             | .92266544         |            |         |         |
| YEAR+STATICK           | ž        |             | . C 6 2 5 2 1 1 5 |            |         |         |
| TREASEC+VERR+STETICA   |          |             | .92302538         | 3.55       |         |         |
| acath#Statica          | 2        |             | .16626649         |            |         |         |
| TRANSEC+PENTH+STATIC   |          |             | .23347576         |            |         |         |
| YERF#PCATH#STATICA     | ž        |             | .85341657         |            |         |         |
| TRANSOYEAROPENTOSTAT   | 40       | 45          | .77755238         | 2.11       | C.CGC1  |         |
|                        | F #      | F R         | -SCLARE           | C.V.       |         |         |
|                        | c.cc     | 01 C        | .765129           | 57.1572    |         |         |
|                        | FCCT PS  | E           |                   | BLGIS FEAR |         |         |
|                        | 0.768644 | 9           |                   | 1.34475038 |         |         |

#### ANALYSIS OF VARIANCE PROCECURE

| CEFENCENT VARIABLE                                   | euezc      | CYRALLLS       |            |             |         |
|--|------------|----------------|------------|-------------|---------|
| SCLACE   | CF         | SUM OF SQUARES | PEAN       | SCLARE      | F VALLE |
| PCCEL  | 251        | 592.37686750   | 3.55       | 370067      | 6.15    |
| EPPCA .  | 504        | 324.01429121   | C. 64      | 2 E E 5 5 C |         |
| CCRRECTEC TCTAL                                      | 755        | 1216.29315671  |            |             |         |
| <b>3010</b>  | CF         | 22 AVONA       | F VALLE    | FR F        |         |
| TRANSECT   | 2C         | 162.21767235   | 14.17      | c.cccı      |         |
| YEAR   |            |                |            |             |         |
| TRANSECT TEAR  | 1<br>20    | 41.67446175    | 3.24       | C.CCC1      |         |
| FCATE  | 1          | 25.42627099    | 35.55      | C.CCC1      |         |
| TRANSECT+PCNTH                                       | 2C         | 54.48474556    |            |             |         |
| YE4F4PCATh   | 1 .        |                |            |             |         |
| TREASECT+YEAR+PLATE                                  |            | 55.83631556    |            |             |         |
| STATICA  | ž          | 114.42665753   | 88.55      |             |         |
| TRANSECT+STATICA                                     |            | 163.16567347   |            |             |         |
| YEAR+STATION   |            | C.84526EC9     |            |             |         |
| TRANSECAYEARASTATICA<br>ACATHASTATICA                | . 4C       | 103.67256765   | 4.03       | C.CCC1      |         |
|  |            | 15.57462412    | 12.42      | C.COCI      |         |
| TRANSEC + PCATH + STATIC                             | 4C         | 122.61475226   | 4.77       | C.CCC1      |         |
| TEAR + PCATH + STATICA<br>TRANS + YEAR + PCXT + STAT |            | 6.65661656     | 5.23       | C.CCS1      |         |
| AMBUZ . A ENE . h C / L . 2 L b L                    | - 40       | 161.22616646   | 3.54       | C.CCC1      |         |
|  | FR F       | R-SCLARE       | C.V.       |             |         |
|  | 0.0001     | C.753862       | €3.757€    |             |         |
|  | ACCT PSE   | i e            | BLGSC PEAN |             |         |
|  | 0.80180141 | l              | 1.25757327 |             |         |

|                                  |           |                       | ANAL    | YSIS CF VAR | IANCE PRCC | ECLRE   |
|----------------------------------|-----------|-----------------------|---------|-------------|------------|---------|
| CEFENCENTVARIABLE                | B0651     | AMN I COL A           |         |             |            |         |
| SCLACE                           | CF        | SLM OF SQL            | ARES    | PEAN        | SCLARE     | F VALUE |
| PCCEL                            | 251       | 4685.9426             | 5007    | 16.66       | 909438     | 9.68    |
| ERFCR                            | 504       | 572.1055              | 2743    | 1.92        | 678CE1     |         |
| CCFRECTEC TCTAL                  | 755       | 5658.0462             | 1750    |             |            |         |
| SCLACE                           | C F       | ANOV                  | A SS    | F VALLE     | FR F       |         |
| TREASECT                         | 20        | 1684.5744             | E 5 5 2 | 43.66       | C.CCC1     |         |
| YEAR                             | 1         | 35.25C4               | 7610    | 18.28       | C.COC1     |         |
| TRANSECTAVEAR                    | 2C        | 311.1267              |         | E. (7       | C.COC1     |         |
| PENTH                            | 1         | 11.2453               |         | 5.63        | C.C161     |         |
| TRANSECT + PCATE                 | 2 C       | 155.4846              |         | 5.07        | C.CCC1     |         |
| YEARANCHTH                       | 1         | 6.3155                |         | 3.27        | C. C71 C   |         |
| TRANSECT+YEAR+PCNTH              | 20        | 227.2712              |         | £.15        | C.CCO1     |         |
| STATICA                          | į         | 405.2548              |         | 105.07      | C. CCC1    |         |
| TPARSECT+STATICA<br>YEAR+STATICA | 4 C       | 1135.2539             |         | 14.71       | C.CCC1     |         |
| TPARSEC + YEAR + STATICK         | 2         | 12.6005               |         | 3.27        | C.C389     |         |
| PCATE OSTATICA                   | 40        | 266.CEEE              |         | 3.71        | C.COC1     |         |
| TRANSEC +PCNT+ +STATIC           | i         | 3.46541               |         | C.5C        | C.4079     |         |
| YESPOPCATE OST AT ICA            | 4C<br>2   | 214.4669              |         | 2.78        | C.CCC1     |         |
| TRANSPYEARSPEATASTAT             | . 4ć      | 11.41519<br>135.64961 |         | 2.56        | C.C528     |         |
|                                  | -         |                       |         | 1.76        | C.C035     |         |
|                                  | FR        | F R-SCUAR             | E       | C.V.        |            |         |
|                                  | 0.000     | 1 0.82819             | 1       | 50.2404     |            |         |
|                                  | RCCT ≯S   | E                     | E       | LG21 PEAN   |            |         |
|                                  | 1.3888655 | 3                     | ž       | .76432100   |            |         |

|                      | _          | ANALYSIS OF VARIANCE PROCEDU |           |        |         |  |  |
|----------------------|------------|------------------------------|-----------|--------|---------|--|--|
| CEFENCENT VAPLACLE   | E0622 [    | EL IM IA                     |           |        |         |  |  |
| SCLACE               | CF         | SLF OF SQLARES -             | FEAR      | SCLARE | F VALUE |  |  |
| PCCEL                | 251        | 2023.35675225                | £.C6      | 134164 | 9.26    |  |  |
| ERRCR                | 504        | 438.64171017                 | C. E1     | C32CE5 |         |  |  |
| CCFRECTED TCTAL      | 755        | 2462.03646246                |           |        |         |  |  |
| SCLACE               | C.F        | ANDVA SS                     | F VALUE   | FR F   | •       |  |  |
| TRANSECT             | 20         | 712.51085461                 |           | C.COC1 |         |  |  |
| YEAR                 | 1          | 1.00114155                   | 1.15      | C.284C |         |  |  |
| TRANSECTAYEAR-       |            | 64.64766242                  | 3.68      | C.CCC1 |         |  |  |
| PCATE                | 1          | 20.45306262                  | 23.5C     | C.CGC1 |         |  |  |
| TRANSECT+PENTH       | 5C         | 146.32361657                 | £.52      |        |         |  |  |
| YEAR+PCATH           | 1          | • E.E117CCC1                 | - 1C.12   |        |         |  |  |
| TRANSECT+YEAR+PCNTH  |            | 118.71571149                 | 6.62      |        |         |  |  |
| STATICA              | ě          | 26.51505087                  | 15.23     |        |         |  |  |
| TRANSECT+STATICN     |            | 568.17520058                 | 16 32     |        |         |  |  |
| YEAR4STATICA         | ē          | 7.01414131                   | 4.03      | C.C184 |         |  |  |
| TRANSEC+YEAR+STATION |            | 58.00608537                  | 2.82      | C.CCC1 |         |  |  |
| ACATHASTATICA        |            | 2.48362355                   | 1.43      |        |         |  |  |
| TRANSEC+PCATH+STATIC |            | 55.65165245                  | 2.06      |        |         |  |  |
| YEAR+PENTHASTATICK   | ž          | 6.25762667                   | 4.74      | C.COSI |         |  |  |
| TRANSOVEAROPCATOSTAT | ·· 4C      | - 126.56567433 -             | 3.55      | C.CCG1 |         |  |  |
|                      | tt t       | R-SCUARE                     | C.V.      |        |         |  |  |
|                      | 0.0001     | C.821836                     | 50.5101   |        |         |  |  |
|                      | FCCT PSE   | e                            | LGZZ PEAN |        |         |  |  |
| ,                    | 0.93290988 | 1                            | -64657726 |        |         |  |  |

| ANALYSIS OF VARIANCE PRECECU | NCE FRECECURE |
|------------------------------|---------------|
|------------------------------|---------------|

| CEFENCENT-VARIABLE       | E0653    | SPHAER I ICAE |            |         |         |
|--------------------------|----------|---------------|------------|---------|---------|
| SCLFCE                   | CF       | SUP OF SCLARE | PEAN       | SCLARE  | F VALUE |
| ICCEL                    | 251      | 3624.4346126  | 14.43      | 557854  | 7.87    |
| ERACA                    | 504      | 524.1505244   | 1.63       | 371217  |         |
| CCPRECTED TCTAL          | 755      | 4548.6255470  | ŧ          |         |         |
| SCLACE                   | CF       | ANDVA S       | F VALLE    | FR F    |         |
| TRANSECT                 | 2C       | 1133.4556905  |            | c.ccc1  |         |
| YEAF                     | 1        | 2.0521615     |            | C.2C97  |         |
| I RANSECT + YEAR         | 2C       | 244.5526261   |            | C. COC1 |         |
| <b>PCNTH</b>             | 1        | 11.11256686   |            | C. C142 |         |
| TRANSECT#PCNTP           | 2C       | 213.6374026   |            | c.coci  |         |
| YE&F#PCATH               | 1        | EC.8512518    |            | C.CCCI  |         |
| TRANSECT OYEAR OPENTH    | 2C       | 177.2623468   |            | C.CCC1  |         |
| 574TICN                  | ž        | 75.0166604    |            | C.CCC1  |         |
| TRANSECT#STATICN         | 4C       | 1645.6266716  |            | C.CCC1  |         |
| YE FRASTATION            | ž        | 7.4654681     |            | C.1317  |         |
| IMANSEC 4 YEAR 4 STATICA |          | 148.6927324   |            | C. CCC3 |         |
| PCATE OST AT ICA.        | ž        | 10.7352215    |            | C.C545  |         |
| 18458C+PChT+4STAT10      |          | 237.3133517   |            | C.CCC1  |         |
| YE&POPCATHOSTATICA       | í        | 33.6321511    |            |         |         |
| TRANSOYEAROPCHTOSTAT     | 40       | 157.2065858   | 2.65       | C.CCC1  |         |
|                          | FR       | F R-SCUARE    | C • V •    |         |         |
|                          | 0.00     | 01 0.756620   | 28.6017    |         |         |
|                          | RCCT P   | S E           | BLG23 MEAN |         |         |
|                          | 1.354146 | 29            | 3.50755813 |         |         |

#### ANALYSIS OF VARIANCE PROCECURE

| CEFENCENT VARIABLE   | EUGZ4     | 1SOPCC#        |            |         |         |
|----------------------|-----------|----------------|------------|---------|---------|
| SCLBCE .             | CF        | SUM OF SQUARES | PEAR       | SCLARE  | F VALUE |
| FCCEL                | 251       | 499.83919624   | 1.55       | 135122  | 7.76    |
| ERFCR                | 504       | 125.35565513   | C.25       | 674543  |         |
| CCFFECTEC TCTAL      | 755       | 625.22685547   |            |         |         |
| SCLACE               | CF        | ANOVA SS       | F VALLE    | FR F    |         |
| TRANSECT             | 20        | 102.06252717   | 15.88      | C.CCC1  |         |
| YEAR                 | 1         | 2.95120412     | 11.5C      | C. COCB |         |
| TRANSECT+YEAR        |           | 18.94226560    |            | C.CCCI  |         |
| PCATE                | j         | C.53242554     |            | C.15C5  |         |
| TRANSECT*PERTF       | 2 Č       | 25.42644562    |            |         |         |
| YEARAPCATE           |           |                |            | C. 6376 |         |
| TRANSECT +YEAR+PCATH | 20        | 40.47184540    | 7. E &     | C.COC1  |         |
| STATICA              | i         | 25.53365618    | 57.51      | C.COC1  |         |
| TRANSECTOSTATICA     |           | 111.81124202   | -1C.ES     | C.COC1  |         |
| YEAF4STATICK         | ž         | 1.45343021     | 2.51       | C. C555 |         |
| TRANSEC+YEAR+STATICN |           |                | 1.47       | C.C344  |         |
| PCATHOSTATICA        |           | G.eG386126.    |            | C.3054  |         |
| TRANSECOPENTHOSTATIC |           | 57.56342766    |            |         |         |
| YEAP+PCRTF+STAT ICK  |           | 1.08218551     |            | C.1226  |         |
| TRANSOYEARAPENTASTAT | 4C -      | 82.20219842-   |            | C.GCC1  |         |
|                      | FR        | F R-SQUARE     | c.v.       |         |         |
|                      | 0.000     | 1 0.754355     | 54.4466    | •       |         |
|                      | #CCT ₽S   | £ ~            | BLG24 PEAN |         |         |
|                      | 0.5067005 | 4              | C.52CE274E |         |         |

| ANALYSIS OF VARIANCE  | FRCCECURE  |                |             |          |         |
|-----------------------|------------|----------------|-------------|----------|---------|
| CEFENCENT VARIABLE    | EICHASS    |                |             |          |         |
| SCLECE                | CF         | SUM OF SCLARES | PEAR        | SCLARE   | F VALUE |
| FCCEL                 | 251        | 1237.25616613  | 4.52        | 546681   | 4.17    |
| ERFCA                 | 504        | \$56.32677261  | 1.16        | 315201   |         |
| CCRRECTEC TCTAL       | 755        | 1833.62454054  |             |          | •       |
| SCURCE                | CF         | BNCVA SS       | F VALLE     | FR F     |         |
| YEAR                  | 1          | 1.54715265     | 1.31        | C.2534   |         |
| PCNTH                 | j          | C.24415322     | (.21        | C. 6498  |         |
| PCATH *YEAR           | i          | 25.45535342    | 21.51       | c.ccc1   |         |
| TRANSECT              | 2Č         | 360.62315504   | 15.24       | C.CCC1   |         |
| TRANSECT*YEAR         | 20         | 45.52675053    | 1.52        | C.CC95   |         |
| TREASECT*PCATE        | 2 C        | 45.25376664    | 1.91        | C. C1 C1 |         |
| TRANSECT+PENT+4YEAR   | 2 C        | 71.21452663    | 2.(1        | c.ccci   |         |
| STATICA               | ž –        | 66.53625375    | 28.12       | C.CCC1   |         |
| STATICATVEAR          |            | 12.54701508    | 5.3C        | C.CC53   |         |
| STATICNOPENTH         | i<br>i     | 3.21645665     | 1.36        | C.2578   |         |
| STATICA*ACATHAYEAR    | ã          | 1.72555455     | €.73        | C.482C   |         |
| TRANSECT +STATION     | 4C         | 165.56736031   | 4.01        | c.ccc1   |         |
| TRANSEC+STATICH+YEAR  | 4C         | 105.27661255   | 2.23        |          |         |
| TRANSEC+STATIC++CNT+  | 40         | 77.84682555    | 1.64        | (.(cs1   |         |
| TRENSASTETA PENTAYERR | 4C         | 230.71106161   | 4.66        | 1723.2   |         |
|                       | ŁŁ (       | R-SCLERE       | C.v.        |          |         |
|                       | 0.000      | 0.674761       | 102.6015    |          |         |
|                       | FCCT PSI   | € !            | ICMASS MEAN |          |         |
|                       | 1.02774630 | )              | 1.04751016  |          |         |

APPENDIX I

Aquatic Macrophyte Sampling Locations

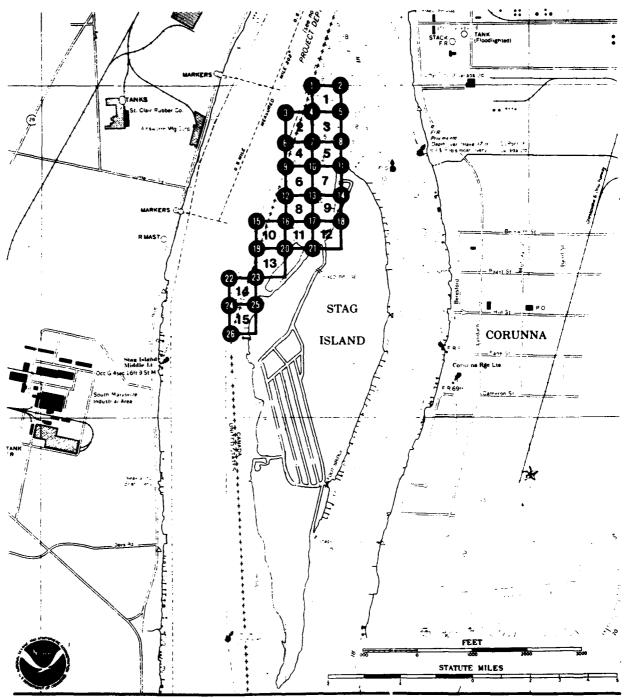


Fig. 1.
Stag Island is in the St. Clair River about 8.5 miles downstream from Port Huron. The starting point for the grid network is in an area on the western side of Stag Island, about 1400 feet downriver from the island's northernmost tip. The set point (grid intersect number 21) is located at a breakwall along the eastern edge of the channel entrance leading to the inner island canals. From this set point the first grid line (grid intersects 21, 17, 13, 10, 7, 4, and 1) ran 3000 ft. at 4° north. The second grid line (intersects 21, 20, and 19) ran 1000 ft. from the set point at 276° west. All other grid points were set by using these two initial lines as markers.



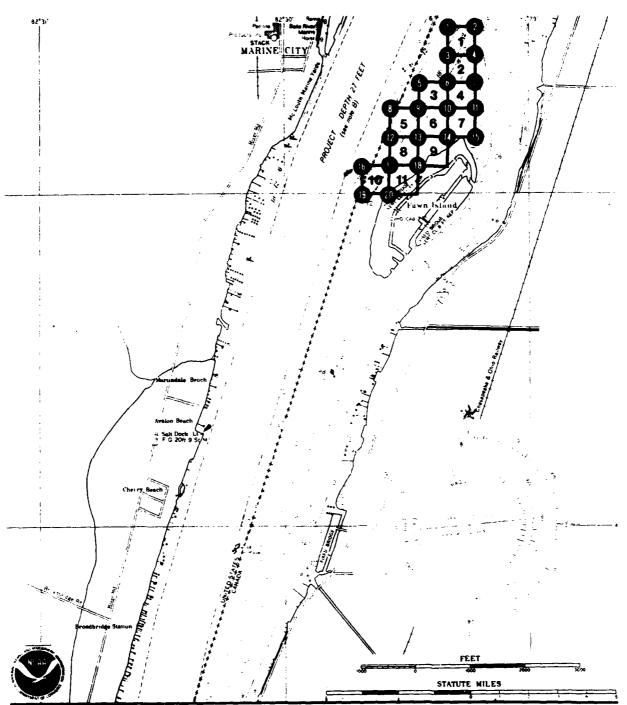
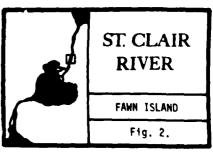


Fig. 2.
Fawn Island is in the St. Clair River about 13 miles downstream from Stag Island. The starting point for the grid network is located on the island's west side, at the northernmost entrance to the inner island canals. The first grid intersection (buoy number 15) is at the junction of a line across the northern tip of the island and a 4° north compass sighting taken from the set point. Pince buoy number 15 is positioned the first grid line (grid intersects 11, 7, 4, and 2) is established, running 2500 feet at 4° north from the set point. The second grid line (intersects 14, 13, and 12) is 1500 feet long, and is sighted off buoy number 15, at 276° west. All other grid points were set by using these two initial lines as markers.



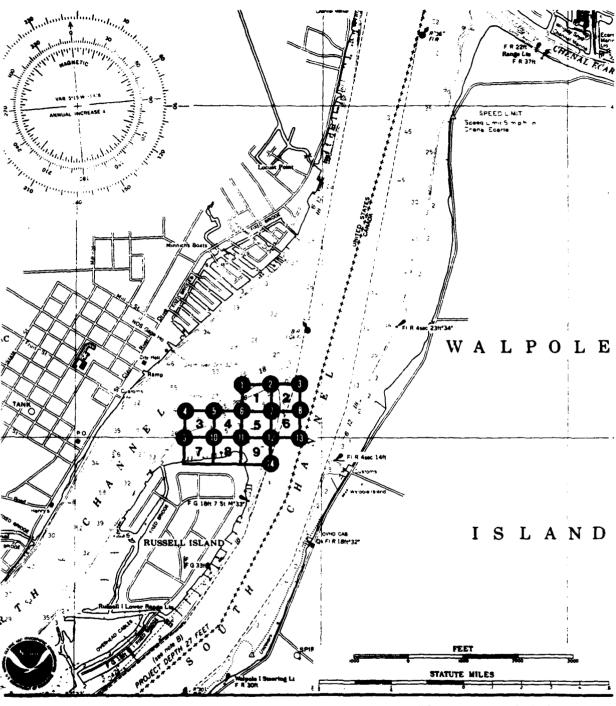
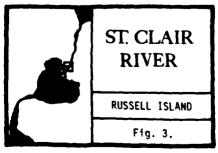


Fig. 3.
Russell Island is in the St. Clair River about 5.5 miles downstream from Fawn Island. The starting point for the grid network is a U.S. Geological Survey stake located at the northeastern point of the island. The first buoy (number 11) is 200 feet offshore in the line with the survey stake and 4° north. From this buoy the first grid line (intersects 6 and 1) is set at a heading of 4° north. The second grid line is evenly divided by buoy number 11. The western half of this grid line (intersects 9 and 10) is set at 276° west from buoy 11. The rest of the grid line (intersects 12 and 13) is set at 96° east.



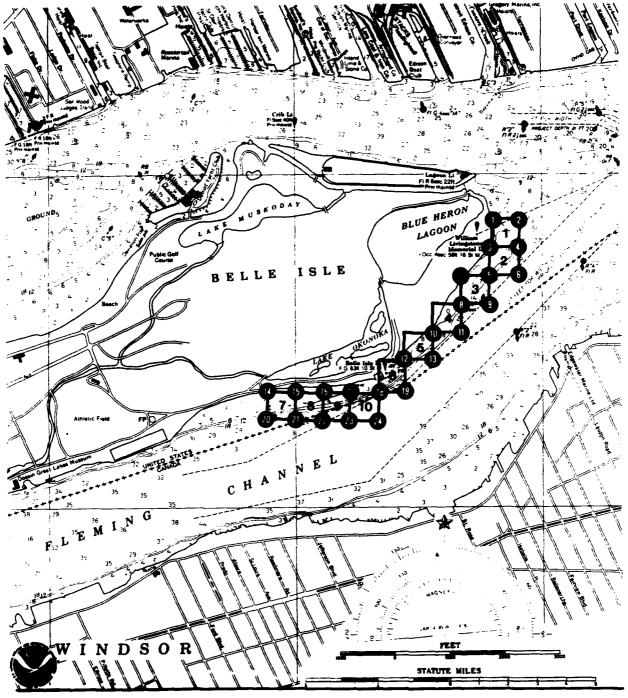
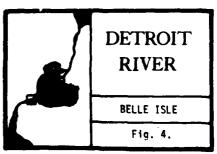


Fig. 4.
Belle Isle is at the head of the Detroit River. The starting point for the grid network is the entrance onto the Michigan DNR fishing pier just west of the Belle Isle Coast Guard Station at grid intersect number 17. Grid intersects 1, 3, 7, 10, 12, 14, 15, 16, and 18 were located from shore with a steel tape. All other grid points were located by boat by sighting from shore at a compass reading of 184°S.



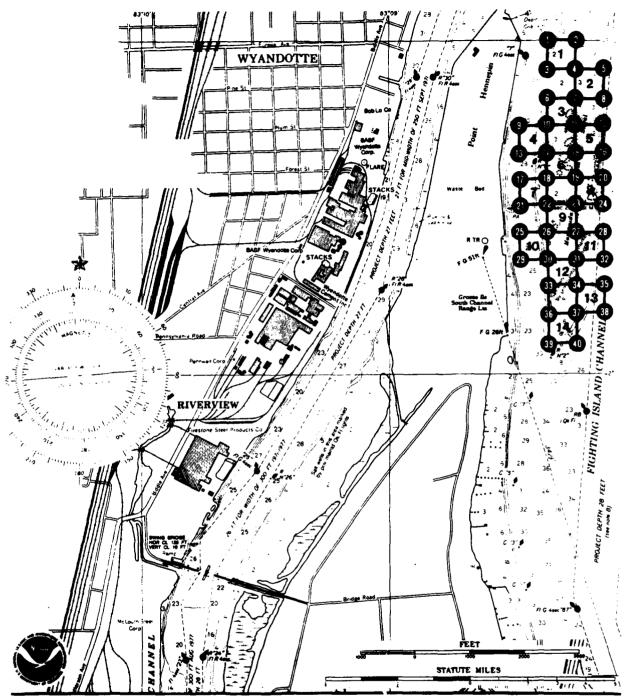
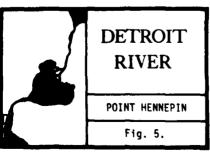


Fig. 5.
Point Hennepin is in the Detroit River about 12.6 miles downstream from Belle Isle. The grid was set along the northeast side of Point Hennepin in the Mamajuda Shoals area. The starting point for setting the was the southeast corner of the Mamajuda light. Grid intersect number 23 was set 100 feet north and 250 feet east of this corner. From this grid intersection the first line (intersects 19, 15, 11, 7, 4, and 2) was placed running 3000 feet at 4°N. The lower half of this line (intersects 27, 31, 34, 37, and 40) ran 2500 feet at 184°S. The east-west lines were set from shore on a compass bearing of 94°E based on shore measurements north and south of the Grosse Isle South Channel Range Light (FG 51 ft.).

A to the second second second second second



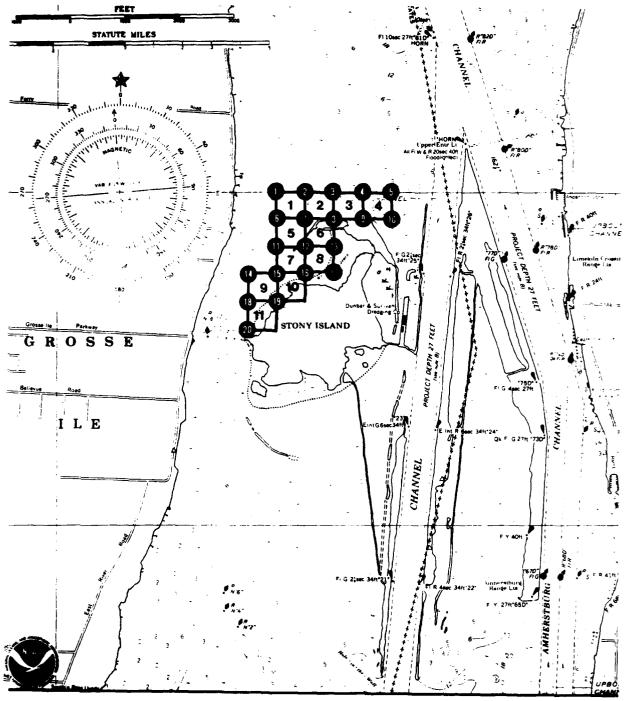
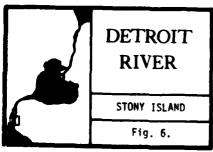


Fig. 6.
Stony Island is in the Detroit River about 5 miles downstream from Point Hennepin. The starting point for the grid network is at grid intersect number 8 which is located 250 feet east of the upper northwest corner of Stony Island. From this set point the first grid line (intersects 6-10) is set using the front edge of the island as a line. Grid intersect number 3 is then set from number 8 on a compass bearing of 4°N. All other points are set in relation to these two lines.



### APPENDIX J

Graphel Collections of Submersed Macrophytes

Submersed Macrophyte Grapnel Data, JUNE, 1983

ISLAND

RIVER

ST. CLAIR STAG

Surface Bottom Surface Bottom 0.3 2.5 0.3 1.7 . 5 0. 0. 9.0 7 2.4 6.0 0.3 2.1 (Ft./Sec.) Note: 1. (-) indicates missing data 2. (+) indicates < 0.100 g/m2 CURRENT 2.7 2.6 2.5 7. 2.6 1.7 0.7 0 9.0 o.3 5 7.5 2 9.0 2.4 ₹ 8 **6**00 2100 <del>2</del>000 720 3900 1700 248 2500 218 2100 2100 **1700** <del>5</del> 2600 8 2900 2108 4100 4 8 (Foot Candles) **4**000 <del>6</del>00 4 10 8 3500 **4**000 **4** 5 6 8 **6**000 3400 800 2**4**8 <u>4</u> 3400 800 4200 3800 4200 **4**000 **4**00 <del>2</del> <del>2</del> 8 **§** 4500 WE I GHT 4500 9 88 S ID) () E COMPOSITION PERCENT 2 2 30 20 20 20 20 8 28 86 97 95 2.0 No Plants Present 20.0 No Plants Present 13.0 No Plants Present 2.0 No Plants Present 20.0 No Plants Present 2.0 No Plants Present 14.0 No Plants Present 12.0 No Plants Present 32.0 No Plants Present 15.0 No Plants Present 8.0 No Plants Present 24.0 No Plants Present 4.0 No Plants Present 32.0 No Plants Present 13.0 No Plants Present MYRIO. SPICATUM MYRIO. SPICATUM ELODEA CANADENS NITELLA HYALINA ELODEA CANADENS ELODEA CANADENS POT. CRISPUS POT. GRAMINEUS POT. NARROW CHARA SPP. POT. NARROW POT. NARROW MACROPHYTE CHARA SPP CHARA SPP CHARA SPP TAXON DEPTH (Ft.) 18.0 **0**.0 9.0 16.0 23.0 <u>4</u> 309041 497386 309043 497392 309051 497395 308054 497404 309024 497381 309034 497386 309040 497397 309056 497408 309045 497410 309057 497416 309033 497382 309024 497387 309036 497392 309025 497391 309027 497395 309042 497403 309034 497399 309057 497410 309037 497406 309062 497413 309049 497414 LOVER COORDINATES Upper ......... -----GRID

CHARA SPP

7

2

ħ 16 7 8 6

5

| 22 | 309075 | 497423                        | 31.0     | ¥ 0      | ants | 309075 497423 31.0 No Plants Present | 22 309075 497423 31.0 No Plants Present             | 1 | 2600        | 100  | •            | • |
|----|--------|-------------------------------|----------|----------|------|--------------------------------------|---|---|-------------|------|--------------|---|
| 23 | 309068 | 308068 497421 9.0 POT. NARROW | 0.6      | POT      | NAR  | AOS                                  | <u>\$</u>   | ç | 4<br>0<br>0 | 2400 | 2400 1.3 1.0 | - |
| 24 | 308060 | 497427                        | 33.0     | 2        | ants | 309080 497427 33.0 No Plants Present | 24 309060 497427 33.0 No Plants Present             |   | 3200        | 1300 |              |   |
| 25 | 309075 | 497427                        | 5.0      | <b>2</b> | ants | 309075 497427 5.0 No Plants Present  | 25 309075 497427 5.0 No Plants Present              |   | 4000        | 3000 | 3000 1.9 1.8 |   |
| 26 | 309085 | 497434                        | <b>%</b> | 2        | ants | 309085 497434 34.0 No Plants Present | 26 309085 497434 34.0 No Plants Present 3000 1200 - |   | 3000        | 1200 |              | , |

.

| data<br>g/m2                   | SNT<br>Sec.)<br>Bottom                    |                | <br>10.              | 0.2   | 1.7    | 0.7        | 5          | -                            |                   | 4.0               | 0   | <b>a</b> .   |                   | 0.7               | 2          | <b>8</b> .0               | # (<br># (  |   | 1.2               |  | 0.5                          |
|--------------------------------|---|----------------|----------------------|---|--------|------------|------------|------------------------------|-------------------|-------------------|---|--|-------------------|-------------------|------------|---------------------------|---|---|-------------------|--|------------------------------|
| mitssing da<br>< 0.100 g       | CURRENT<br>(Ft./Sec.<br>Surface Bot       |                | 1.9                  | 6.0   | 2.1    | 1.2        | 1.1        | 1.6                          |                   | :                 | 60  | 2.0  |                   | 1.5               | 1.2        | 6.                        |   |   | 1.6               |  | 0.1                          |
|                                | _   |                | 1300                 | 850   | 1200   | 91         |            | 1000                         | 310               | 630               | 870   | 950  | 300               | 960               | 1500       | 1700                      | 420   | 830   | 1400              | 430  | 1500                         |
| (-) indicates<br>(*) indicates | LIGHT<br>(Foot Candles)<br>Surface Bottom | 1600 110       | 2000 1300            | 1900  | 2100   | 2000       | 2100       | 2000                         | 450               | 1900              | 2000  | 2400   | 830               | 1800              | 2000       | 2400                      | 1500  | 2000  | 2000              | Ħ  | 2100                         |
| Note: 1.<br>2.                 | WET<br>WEIGHT<br>(gm.)                    | 160            |                      | 180   | 9      |            |            | 20                           |                   |                   | ō   | 50   |                   |                   | S          | 1                         | #<br> 0<br> 0 | # 4 H H H H H H H H H H H H H H H H H H   |                   |  |                              |
|                                | PERCENT<br>COMPOSITION                    | W<br>4<br>9    | 91<br>16<br>18<br>18 | 80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>8 | 100    | 100        | 400        | 60<br>40                     |                   | )                 | 60<br>25<br>15                              | 9.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0 |                   |                   | 001        | 80<br>20                  | H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H                                  | 100<br>60<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61 |                   | TREET OF THE STREET OF THE STR | 900                          |
|                                | MACROPHYTE<br>TAXON                       | POT. GRAMINEUS | : :                  | POT. NARROW<br>CHARA SPP.<br>ELODEA CANADENS                                    |        | CHARA SPP. | CHARA SPP. | POT. GRAMINEUS<br>CHARA SPP. | No Plants Present | No Plants Present | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW | CHARA SPP.<br>Pot. Gramineus                                       | No Plants Present | No Plants Present | CHARA SPP. | CHARA SPP.<br>Pot. Narrow | No Plants Present   | No Plants Present   | No Plants Present | No Plants Present  | CHARA SPP.<br>POT. GRAMINEUS |
| 1983                           | DEPTH<br>(Ft.)                            | 8.5            | 15.0                 | 13.0  | 15.0   |            |            | 12.0                         |                   | 21.0 N            | •   | 6.0  |                   |                   |            | ; ;                       | 36.0 N  |   |                   | ,  | 0.4                          |
| CUNE. 1                        | AN<br>NATES<br>LOWER                      | 498255         | 498255               | 498252  | 498259 | 498257     | 498258     | 498263                       | 496265            |                   |   | 498266   |                   | H                 | 498272     | 498274                    | 498287  | : ;   | 498273            | 498280   | 498287                       |
| 1 Data.                        | LORAN<br>COORDINATES<br>Upper Lower       |                | 309566               | 309592  |        | 309602     |            | 309572                       | 309603            | 309604            | 309595                                      | 30957  | 309610            | 309604            | 309594     | 09578                     | 309633  |   | 309604            | 309626   | 309622                       |
| te Grapne                      | GR I O<br>Number                          | - 1            | 2                    | ၉   | 4      | 100        | 9          |                              | eo .              | 6                 | 0   |  | 12                | £ 88              | 14 3       | ស្                        | 16  | 17 309622   | £                 | 19   | 20                           |
| Macrophy 1                     | ISLAND                                    | FAWN           |                      |   |        |            |            |                              |                   |                   |   |  |                   |                   |            |                           |   |   |                   |  |                              |
| Submersed Macrophyte Grapnel   | RIVER ISLAND GRID<br>NUMBER               | ST. CLAIR FAWN |                      |   |        |            |            |                              |                   |                   |   |  |                   |                   |            |                           |   |   |                   |  |                              |

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER   | ISLAND | GRID  | 97     | LORAN                     | DEPTH             | MACROPHYTE  | YTE  | PERCENT  | WET  | I TGHT                           |              | THEORY   |
|---------|--------|---|--------|---------------------------|-------------------|---|--|--|--|----------------------------------|--------------|--|
|         |        |   | _      | COORDINATES<br>pper Lower | (Ft.)             | TAXON   |  | COMPOSITION  | WEIGHT (gm.)   | (Foot Candles)<br>Surface Bottom | dles)        | (Ft./Sec.)   |
| DETROIT | BELLE  | -   | 312760 | 499947                    | n 4<br>n 4<br>n 0 | POT. NARROW<br>POT. RICHAR<br>POT. CRISPU<br>MYRIO. SPIC<br>ELODEA CANA | NARROW<br>RICHARDSONI<br>CRISPUS<br>. SPICATUM | 50<br>45<br>3  | 320  | 3500                             | # 64<br># 64 | 1  |
|         |        | I   | 312753 | 499945                    | o.<br>G           | POT. RICH   | RICHARDSONI<br>SPP                             | TO THE STATE OF TH | 80   | 3700                             | 99           |  |
|         |        |   | 2      |                           | 7.0               | POT. CRISPUS<br>POT. RICHARD<br>POT. NARROW                             | CRISPUS<br>RICHARDSONI                         |  | 620  | 3500                             | 360          |  |
|         |        | 4 11  | 312753 | 499951                    | 13.0              | No Plants Present   | Present  |  | #<br>#<br>#<br>#<br>#<br>#                                 | 3600                             | 15           |  |
|         |        | 10 H  | _      |                           |                   | No Plants Present   | Present  |  |  | 3400                             | 36           |  |
|         |        |   | _ =    | 4                         | 30.0              |   | 1 1873 H                                       |  | ~ 60<br>60<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61 | 3900                             | 9            |  |
|         |        |   | 127    | 499968                    | <b>6</b> 0        | POT. CRISPUS<br>POT. NARROW<br>CHARA SPP.                               | SPUS<br>2014                                   | 80<br>82<br>82   | # # # # # # # # # # # # # # # # # # #                      | 2500                             | 150          |  |
|         |        |   | 312781 | 499969                    | 18.5              | No Plants   | Present  |  |  | 3700                             | 4            |  |
|         |        | 6   |        | 4 1                       | 1                 | No Plants Present   | Present  |  |  | 3600                             | 15           | 12 16 16 16 16 16 16 16 16 16 16 16 16 16  |
|         |        | 10 3  |        | 499975                    |                   | Plants  | Present  |  |  | 3400                             | 20           |  |
|         |        |   |        | 4 1                       | 35.0              | No Plants Pr  |  |  |  | 3600                             | 13           |  |
|         |        | 12  | = :    | 499983                    | 7. S              | POT. RICHAR<br>CHARA SPP.<br>PCT. NARROW                                | RICHARDSONI<br>SPP<br>NARROW                   | 80<br>ව<br>ව   | 6  | 3400                             | # 150        | # 1  |
|         |        | 13 3  | 312786 | 499978                    | 34.0              | No Plants P   | Present  |  |  | 3500                             | 22           | #<br>#<br>#  |
|         |        | 4   |        |                           |                   | CHARA SPP.  |  | 95   | រភ   | 3000                             | 1600         | nd day of the state of the stat |
|         |        |   | 1284   | 4                         | 3.5               | CHARA SPP.<br>VALLISNERI  | IA AMER  | 75<br>25   | 20   | 3700                             | <u>\$</u>    | <b>新鮮版 计数据 化水油 化二氯甲基乙基甲基乙基甲基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙</b>  |
|         |        | ı H   | 312838 | 4                         | 4.0               | CHARA SPP.<br>VALLISNERI  | IA AMER  | 85<br>- 55   | 99   | 3700                             | 320          | 教育   |
|         |        | 17 3<br>8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | - 11   | 499                       | 2.0               | CHARA SPP   |  | 400  | 330  | 3400                             | 4 10         |  |
|         |        | 18  |        |                           | 6.0               |   |  | <u>\$</u>  | ဖ  | 3400                             | 12           |  |
|         |        | 19 3  | 312801 | 499987                    |                   | nts   | 20 LQ  | 7 M 01 01 01 01 01 01 01 01 01 01 01 01 01   | - 17 41 41 41 41 41 41 41 41 41 41 41 41 41                | 2500                             | 15           |  |

| <b>請跟政院議院持续的政院的政院的政院的现在分词,不是不是一个人,不是一个人,不是一个人,不是一个人,不是一个人,也不是一个人,也不是一个人,也不是一个人的人,也不是一个人的人,也不是一个人的人,也不是一个人的人,也不是一个人的人,也不是一个人的人的人,也不是一个人的人的人,也不是一个人的人的人,也不是一个人的人的人,也不是一个人的人,也不是一个人的人,也不是一个人的人,也不是一个人的人,也不是一个人的人,也不是一个人的人,也不是一个人,也不是一个人,也不是一个人,也不是一个人,也不是一个人,也不是一个人,也可以是一个人,也可以</b> | 3700 7                               | •  | 3700 15 -                            | <b>经验验检验检验检验检验检验检验检验检验检验检验检验检验检验检验检验检验检验检验</b>                  | 3600 18 -                            |                                   | 3200 15                              |
|--|--------------------------------------|--|--------------------------------------|---|--------------------------------------|-----------------------------------|--------------------------------------|
| 化二甲基苯甲基苯甲甲基苯甲甲甲基甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲   | 312849 499999 16.0 No Plants Present | 化甲基化甲甲苯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲           | 312840 499998 13.5 No Plants Present | 化可加加加度可以回收的现在分词使用的现在分词使用的可以可以可以可以可以可以可以可以可以可以可以可以可以可以可以可以可以可以可以 | 312830 499997 33.0 No Plants Present | 计转移机线 化对抗吸收性脱氧性 医乳腺性异形性 医乳腺性纤维性 医 | 312814 499993 34.0 No Plants Present |
| 多  | 21 312849 499                        | 计算机 计记录 化二甲基苯甲基苯甲基甲甲基甲甲基甲甲基甲甲基甲甲基甲甲基甲甲基甲甲基甲甲基甲甲基甲甲 | 22 312840 498                        | 医神经球状体 计多数 医多种性 医多种性 化二甲基苯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基  | 23 312830 499                        |                                   | 24 312814 499                        |

Submersed Macrophyte Graphel Data, JUNE, 1983

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER | ISLAND   | GRIO       | 107    | LORAN         | DEPTH          | ¥                              |                                | PERCENT     | WET       | LIGHT                            | :                          | CURRENT     | ,                 |
|-------|----------|------------|--------|---------------|----------------|--------------------------------|--------------------------------|-------------|-----------|----------------------------------|----------------------------|-------------|-------------------|
| 3     |          | K 300      | Upper  | LOWER         | (Ft.)          | -                              |                                | COMPUSITION | (Gm.)     | (root candles)<br>Surface Bottom | ot tom                     | ~ ·         | Sec.)<br>Bottom   |
| 1     | HENNEPIN | -          | 314077 | 500675        | 31.0           | No Plant                       | No Plants Present              |             |           | 3300                             | 360                        | 0.0         | 9.0               |
|       |          | 2          | 314065 | 500673        | 0.0            | POT. NA                        | . ~ .                          | ф           | 80        | 3500                             | 1400                       | 0.2         | 0.0               |
|       |          | က          | 6      |               | 24.0           | No Plant                       | No Plants Present              |             |           | 3500                             | 360                        | <b>9</b> .0 | 0.7               |
|       |          | 4          | 9      |               | 4<br>0         | POT. NARROW                    | POT. NARROW                    | -<br>100    | 120       | 3100                             | 1700                       | 0.2         | 0.                |
|       |          | ស          |        |               | 0.<br>60.      | POT. RIC                       | RICHARDSONI                    | 100         | 08        | 3000                             | 850                        | 0.7         | 0.4               |
|       |          | 9          | i      |               | 6.0            | •                              | NARROW                         | 8           | 70        | 3300                             | 1500                       | 0.7         | 0.3               |
|       |          | 7          | 0      |               | 9.0            |                                | NARROW                         | <b>6</b>    | 180       | 3200                             | -<br>-<br>-<br>-<br>-<br>- | 0.2         | 0.7               |
|       |          | <b>e</b> 0 |        |               | 0.<br>0.       |                                | RICHARDSONI<br>Narrow          | 90<br>40    | 10        | 3000                             | 920                        | <b>a</b> .0 | 0.7               |
|       |          | 6          | . 1    |               | 33.0           | No Plant                       | No Plants Present              |             |           | 3200                             | <b>4</b>                   |             | 0.8               |
|       |          | <b>o</b>   | 314087 | 500692        | 7.0            | POT. NARROW<br>NITELLA HYALINA | POT. NARROW<br>NITELLA HYALINA | 90<br>01    | <u>\$</u> | 3300                             | <del>-</del><br>8          | 0.1         | 0.4               |
|       |          | 1.         | . 6    |               | 6.0            | POT NA                         | NARROW                         | 100         | ç         | 3800                             | <u>5</u>                   | •<br>•      | 0.3               |
|       |          | 12         | 3      | 500691        | 31.0           | No Plants Pr                   | s Present                      |             |           | 3200                             | 8                          | 7.5         | 6                 |
|       |          | 13         | 314096 | 500696        | 34.0           | No Plants Press                | No Plants Present              |             |           | 3400                             | 510                        | 4.4         | 0.0               |
|       |          | <u>*</u>   | 6      |               | 7.0            | NITELLA HYA<br>Pot. Narrow     | NITELLA HYALINA<br>Pot. Narrow | 60<br>40    | 9         | 3300                             | 1600                       | 0.2         | <del>-</del><br>0 |
|       |          | ě          |        | 314080 500697 | <b>4</b><br>0. | POT. NAR<br>NITELLA            | POT. NARROW<br>NITELLA HYALINA | ខ្លួ        | င္တ       | 3600                             | 1800                       | 0.5         | 0.2               |
|       |          | 16         | 314671 | 500698        | 28.0           | No Plants Pr                   | No Plants Present              |             |           | 3500                             | 320                        | o.<br>-     | 6.7               |
|       |          | 17         | 314101 | 500705        | 32.0           | No Plants                      | No Plants Present              |             |           | 3400                             | 570                        | 7.0         | 0.1               |
|       |          | 18         |        | 314093 500704 | 7.0            | NITELLA HYALIN                 | HYALINA                        | ф<br>Ф      | 65        | 3100                             | 1300                       | 0.3         | 0.5               |
|       |          | <u>0</u>   | 1 I    | 500702        | 6.0            | NITELLA<br>POT. NAS            | LLA HYALINA<br>Narrow          | 0.0<br>0.4  | 9         | 4400                             | 2 100                      | 0.0         | 0.0               |
|       |          |            |        | 500703        | 27.0           | No Plants                      | s Present                      |             |           | 3000                             | 099                        | 6.0         | 0.3               |
|       |          | 21         | , '' i | 314104 500711 | 31.0           | No Plant                       | Pleate Present                 |             |           | 3200                             | 480                        | 4.4         | 9.0               |
|       |          | 22         | 314095 | 500710        | 5.0            |                                | NARROW                         | ¢00‡        | 0         | 3000                             | 1800                       | 0.3         | 0.2               |
|       |          | 23         | 31     |               | 5.<br>O        | i i                            | NARROW                         | <b>1</b> 00 | 9         | 3500                             | 2000                       | 0.6         | 9.4               |
|       |          | 24         | 31     | 4077 500709   | 34.0           | No Plants                      | s Present                      |             |           | 3300                             | 450                        | 1.0         | 4.0               |

| 25         | 314107 | 500719        | 31.0        | No Plants Present                                 |               |                    | 3500     | 440            | 0.1         | 0.3      |
|------------|--------|---------------|-------------|---|---------------|--------------------|----------|----------------|-------------|----------|
| 26         | 314100 | 314100 500718 | 7.0         | POT. NARROW<br>NITELLA HYALINA<br>MYRIO. EXALBESC | 70<br>29<br>1 | <del>-</del><br>10 | 900e     | 1300           | 0.2         | 0.2      |
| 27         | 314090 | 314090 500716 | 0.4         | POT. NARROW<br>POT. CRISPUS                       | 85<br>85      | 8                  | 34<br>8  | - 180<br>- 180 | 0.5         | 0.0      |
| 28         | 314082 | 314082 500715 | 32.0        | No Plants Present                                 |               |                    | 3600     | 000            | 1.2         | 0.5      |
| 29         | 314108 | 314108 500723 | 29.0        | No Plants Present                                 |               |                    | 3300     | 380            | 9           | 0.5      |
| 8          | 314104 | 500725        | 0.0         | POT. NARROW<br>NITELLA HYALINA                    | 80            | 205                | 3000     | 1200           | 0.5         | 0        |
| 31         | 314093 | 314093 500722 | <b>0</b> .0 | POT. NARROW<br>NITELLA HYALINA                    | 80<br>20      | 160                | 3500     | 1400           | 0.9         | 0        |
| 32         | 314085 | 314085 500725 | 34.0        | ž   |               |                    | 3300     | 830            | <b>a</b> .  | 0        |
| 33         | 314107 |               | 0.6         | POT. NARROW                                       | <u>\$</u>     | 52                 | 3400     | ÷<br>8         |             | <u>.</u> |
| 9 <b>.</b> | 314097 |               | 12.0        |   | <u>\$</u>     | ç                  | 3600     | 00s            | <b>.</b>    | 9.0      |
| 35         | 314089 |               | 33.0        | Ž   |               |                    | 3600     | 280            | -<br>0.     | 0.0      |
| 36         | 314110 | 500741        | O. 00       | POT. NARROW<br>VALLISNERIA AMER                   | 98<br>2       | <b>52</b>          | 3000     | 870            | <b>9</b> .0 | 0.5      |
| 37         |        | 314102 500739 | 37.0        | 314102 500739 37.0 No Plants Present              |               |                    | 3600     | 740            | 0.7         | 0.6      |
| 38         |        | 314096 500740 | 32.0        | No Plants Present                                 |               |                    | 3400     | 930            |             | - 1      |
| 38         | 314111 | 314111 500745 | 13.0        | No Plants Present                                 |               |                    | 2500     | 270            | 9.0<br>O    | 0.9      |
| 0          | 314110 |               | 34.0        | No Plants Present                                 |               |                    | 37<br>80 | 0 <b>6</b>     | - : -       | 0.0      |

Submersed Macrophyte Graphel Date, JUNE, 1983

Note: 1. (-) indicates missing data 2. (+) indicates < 0.100 g/m2

| RIVER   | RIVER ISLAND GRID<br>NUMBER | GRID<br>NUMBER | <b>–</b> • | LORAN<br>COORDINATES<br>PPOF LOWOF | <b>DEPTH</b><br>(Ft.) | MACR                      | MACROPHYTE<br>TAXON                             | PERCENT<br>COMPOSITION                     | WET<br>WEIGHT<br>(gm.)   | LIGHT<br>(Foot Candles)<br>Surface Bottom | r<br>ndles)<br>Bottom | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | NT<br>ec.)<br>Bottom |
|---------|-----------------------------|----------------|------------|------------------------------------|-----------------------|---------------------------|---|--|--|---|-----------------------|---|----------------------|
| DETROIT | STONEY                      | -              | 314229     | 500974                             | 0.6                   | P01.                      | NARROW  | 8  | 8  | 4100                                      | 510                   |   | 0.                   |
|         |                             | 2              |            |                                    | 9.0                   |                           | NARROW  | <b>6</b>                                   | 8  | 3900                                      | 099                   | 0.8                                     | 4.0                  |
|         |                             |                |            | 500974                             | <b>8</b> 0.0          | • (                       | NARROW  | \$   | 90   | 4300                                      | <u>-</u>              | 0.0                                     | 0.0                  |
|         |                             | 4              | 314193     | 500973                             | <b>6</b> 0            | MYRIO.<br>POT. N          | MYRIO. SPICATUM<br>Pot. Narrow                  | 60<br>40                                   | 8  | <b>6</b>                                  | 750                   | 0.4                                     | o. <del>1</del>      |
|         |                             |                | 314183     |                                    | 17.0                  | No Plants                 | No Plants Present                               | - 5 10 00 10 10 10 10 10 10 10 10 10 10 10 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-        | 4000                                      | 30                    | 0.0                                     | 9.6                  |
|         |                             | 9              |            |                                    | 12.0                  | P0T.                      | POT. NARROW                                     | 001  | 9  | 3800                                      | 96                    | 1.2                                     | 9.0                  |
|         |                             |                |            | 500982                             | 7.0                   | POT.                      | NARROW  | 00   | <u>\$</u>  | 3600                                      | 340                   | 1.4                                     | 0.7                  |
|         |                             | <b>c</b> o     | 314212     | 500981                             | <b>4</b> .0           | VALL 1:<br>POT.  <br>POT. | VALLISNERIA AMER<br>POT. NARROW<br>POT. CRISPUS | 2.4<br>0.0                                 | i io   | 3500                                      | 7000<br>7000          | 4.0                                     | <del>-</del> .       |
|         |                             | ø              |            |                                    | 3.0                   | No Plants                 | nts Present                                     |  |  | <b>6</b>                                  | 8                     | 0.0                                     | 0.0                  |
|         |                             | 0              | 314189     |                                    | 0.0                   | No Plants                 |   |  |  | 4000                                      | 9                     | 0.2                                     | 0.4                  |
|         |                             |                |            | 500992                             | 0.0                   | No Plants                 | No Plants Present                               |  |  | 4200                                      | 230                   | 1.7                                     | -                    |
|         |                             | i i            | 314232     |                                    | 0.4                   | . (                       | POT. CRISPUS                                    | 100  | 2500   | 3500                                      | 96                    | 0.0                                     | 0.0                  |
|         |                             | 13             |            | 500991                             |                       | P0T.                      |   | <b>6</b>                                   | 2700   | 3200                                      | Ē                     |   | 0.0                  |
|         |                             | 7              |            |                                    |                       | No Plan                   | No Plants Present                               |  |  | 3100                                      | 360                   |   | 5.0                  |
|         |                             |                |            |                                    |                       | No Pla                    | No Plants Present                               |  |  | 4 100                                     | 930                   |   | 9.                   |
|         |                             | 16             |            | 500999                             | 2.0                   | POT.                      | POT. CRISPUS                                    | 001  | 90   | 3600                                      | 2100                  | 0.8                                     | 80.0                 |
|         |                             |                |            |                                    | 0.5                   | TYPHA                     | TYPHA ANGUSTIFOL                                | <b>0</b>                                   | •  | 3500                                      | 3400                  | 0.2                                     | 0.0                  |
|         |                             | 6              |            |                                    | to.0                  | No Pla                    | No Plants Present                               |  |  | 3600                                      | 300                   | 2.4                                     | 0.7                  |
|         |                             | 6              | 314201     | 501010                             |                       | No Plants                 | nts Present                                     |  |  | 3000                                      | 650                   | 2.1                                     | 0.7                  |
|         |                             | 20             | 314279     | 501020                             | 0, 0                  | No Plants                 | nts Present                                     |  | " t<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J<br>J | 3500                                      | 8                     | 2.5                                     |                      |

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

| RIVER          |        |                               |                  |                                  |                    |  |  |                                       |   |               |   |                |
|----------------|--------|-------------------------------|------------------|----------------------------------|--------------------|--|--|---------------------------------------|---|---------------|---|----------------|
|                | ISLAND | RIVER ISLAND GRID<br>NUMBER C |                  | LORAN<br>DORDINATES<br>Der Lower | DEPTH<br>(Ft.)     | MACROPHYTE<br>Taxon  | PERCENT<br>COMPOSITION                 | VET<br>VEIGHT<br>(gm.)                | (Foot Candles)<br>Surface Bottom  |               | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | INT<br>Botto   |
| ST. CLAIR STAG | TAG    | -                             | 308034           | 497381                           | <del>4</del><br>0. | No Plants Present  | :                                      |                                       |   | 8             | 2.9 2.7                                 | 2.7            |
|                |        | 2 30                          | 309019           | 9019 497380                      | 15.0               | 15.0 No Plants Present   |  |                                       | 1100 900 2.6 2.4  | 8             | 2.6                                     | 2.4            |
|                |        | 6                             | 9042             |                                  |                    | lant   |  |                                       | 8   | 8             |   | 2.0            |
|                |        | 90                            | 9036             | 497386                           | 15.0               | Plant  | 物性性神经病毒                                |                                       | 1000  |               |   | 2.8            |
|                |        | 30                            |                  | 497384                           | 15.0               | No Plants Present  | ## ## ## ## ## ## ## ## ## ## ## ## ## | # # # # # # # # # # # # # # # # # # # | 1000  | 8             | 2.4                                     | 2.0            |
|                |        | 9                             |                  | 497389                           | 24.0               | No Plants Present  | 有 新 原                                  |                                       |   | #<br>#        | 2.8                                     | 2.6            |
|                |        | 7 30                          |                  | 497391                           | 14.6               | 14.6 No Plants Present   | 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해  |                                       | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | :             | <br>                                    | 9.             |
|                |        | 30                            | 309024           | 497390                           | <b>0</b> .0        | 9024 497390 6.0 No Plants Present                                      | #<br>0<br>0<br>0<br>1<br>1<br>1        |                                       |   | 8             |   | 2.4            |
|                |        | 0                             | 9 309056 497396  |                                  | 22.0               | 22.0 No Plants Present   |  |                                       |   |               | 9.                                      | . <del>.</del> |
|                |        | ç                             | 10 308038 497397 | 497397                           | 12.2               | 12.2 No Plants Present   |  |                                       | 8   | 900           |   | 1.7            |
|                |        | 11 309026                     | 308026           | . <b>4</b>                       | 9                  | ¥.   | <u>8</u>                               |                                       | 700   | :             | 7                                       |                |
|                |        |                               | 308053           |                                  | 20.0               | · Z  |  |                                       | 006   | <b>4</b>      | 2.4                                     |                |
|                |        |                               | 309042           | 497404                           | 5.<br>O            | ELODEA CAMADENS<br>POT. NARROW<br>NITELLA HYALINA                      | O 10 10                                | 20                                    | 006   | 000           |   | 0              |
|                | ·      |                               | 308037           | 9037 497405                      | 2<br>.0            | POT. CRISPUS<br>POT. RICHARDSONI<br>ELODEA CANADENS<br>NITELLA HYALINA | <b>6</b> 5                             | 3700                                  | <b>600</b>  | 8             | 0.2                                     | 0.2            |
|                |        | ÷                             | 309070           | 497404                           | 20.0               | No Plants Present  |  |                                       | 200   | 200<br>200    | 2.1                                     | 2.0            |
|                |        |                               |                  |                                  | • _ '              | No Plants Present  |  |                                       | 989   | 8             | 2.3                                     | 2.1            |
|                |        | 1                             |                  |                                  |                    | ELODEA CANADENS<br>POT. RICHARDSONI<br>MYRIO. SPICATUM                 | 96<br>35<br>5                          | 1150                                  | 200   | 8             | 9.0                                     | <b>6</b>       |
|                |        | <b>.</b>                      |                  | 497411                           | 4.<br>Ri           | CHARA SPP.<br>Pot. Crispus<br>Pot. Narrow                              | 85 C ru                                | <b>6</b>                              | 440   | 7 <u>8</u> 00 | <b>o</b> .                              | 0              |
|                |        | 19 30                         | 9071             | 497409                           | 23.0               | No Plants Present  |  |                                       |   |               | <b>6</b> .                              | <b>.</b>       |
|                |        | 20 30                         | 9055             | 497412                           | 15.0               | 15.0 POT. RICHARDSONI<br>CHARA SPP.                                    | 50<br>50                               | 50                                    | 009   | 8             | 0.7                                     | o. 0           |
|                |        | 21 30                         | 309046           | 309046 497413                    | 3.4                |  | 95                                     | 140                                   | 200   | 180           | 0<br>.5                                 | 0<br>4         |

| 1  |        | 1      |       | MYRIG. SPICATUM 1                                       |      |                    |  |             |     |
|----|--------|--------|-------|---|------|--------------------|--|-------------|-----|
| 22 | 309077 | 497421 | 31.0  | 22 309077 497421 31.0 No Plants Present 600 200 2.6 2.3 |      | 89                 | 600 200 2.6 2.3                                    | 2.6         | 2.3 |
| 23 | 309070 | 497420 | O. 60 | 23 309070 497420 9.0 PDT. NARROW 80 100 550 200 0.9 0.6 | 100  | 550                | 200  | 200 0.9 0.6 | 0   |
| 24 | 309080 | 497427 | 33.0  | 24 309080 497427 33.0 No Plants Present 400 200 3.4 3.1 |      | 8                  | 400 200 3.4 3.1                                    | 3.4         | 9.  |
| 25 | 309072 | 497426 | 6.0   | 25 308072 497426 6.0 CHARA SPP. 70 80 440 110 1.2 0.4   | 80   | 80 440 110 1.2 0.4 | 110  | 4.2         | ò   |
| 26 | 30006  | 407434 | 2     | 26 328086 497434 34 O O O Diante Brasant                | R II |                    | 电影 医苯基苯基苯酚 医甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 |             |     |

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER ISLAND   | ISLAND | GRID<br>NUMBER | <b>-</b> | LORAN<br>COORDINATES<br>PPGF LOWER | <b>DEPTH</b><br>(Ft.) | MACROPHYTE<br>TAXON          | PERCENT<br>COMPOSITION | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | if<br>indles)<br>Bottom | CURRENT<br>(Ft./Sec.<br>Surface Bot | ENT<br>Sec.)<br>Bottom |
|----------------|--------|----------------|----------|------------------------------------|-----------------------|------------------------------|------------------------|------------------------|---|-------------------------|-------------------------------------|------------------------|
| ST. CLAIR FAWN | FAWN   | -              |          |                                    |                       | No Plants Present            |                        |                        | 2000                                      | 340                     | 2.4                                 | 2.1                    |
|                |        | 2              | 309566   |                                    | 12.0                  | POT. NARROW                  | <del>0</del>           | *                      | 2300                                      | 4                       |                                     | 0.5                    |
|                |        | 9              | 309580   | 498253                             | 12.0                  | CHARA SPP.                   | <del>0</del>           | ß                      |   | 320                     |                                     | <b>.</b>               |
|                |        | 4              | 309568   |                                    | 12.0                  | POT. NARROW                  |                        | 340                    |   | 000                     |                                     | 0.3                    |
|                |        | <b>1</b> 0     | 309592   | 498250                             | 24.0                  | No Plants Present            |                        |                        | 2800                                      | 8                       | 6.                                  |                        |
|                |        | 9              | 309584   | 309584 498259                      | b. 0                  | ا ليا ا                      | 0.00<br>0.00           | 099                    | 2200                                      | <b>9</b>                | 0.2                                 | 0.0                    |
|                |        | 7              | 309573   | 6                                  | 8.7                   | POT. GRAMINEUS<br>CHARA SPP. | ខ្លួ                   | Qg                     | 3200                                      | <del>1</del> 600        | ٠. <del>١</del>                     | 0.7                    |
|                |        | 6              | 309619   |                                    | 34.0                  | No Plants Present            |                        |                        | 3000                                      | 8                       | 2.0                                 | 7.                     |
|                |        | 8              |          | •                                  | 12.0                  |                              | õ                      | B                      | 2400                                      | 8                       | 2.4                                 | 2.3                    |
|                |        | õ              | 309587   | 498265                             | 4.<br>10.             | CHARA SPP.<br>Pot. Marrow    | ង<br>ម                 | 20                     | 2200                                      | 8                       | 0.1                                 | <b>0</b>               |
|                |        | =              | 309576   | 498265                             | 5.1                   |                              | <u>\$</u>              | <b>Q</b>               | 3300                                      | 2000                    | 0.5                                 | 0.5                    |
|                |        | 12             |          | 498271                             | 28.0                  | No Plants Present            |                        |                        | 2700                                      | 8                       | 2.5                                 | 2.2                    |
|                |        | 13             |          | 498270                             | 6.2                   | POT. GRAMINEUS<br>CHARA SPP. | <b>8</b> 5             | Ç                      |   | 0<br>6                  | 1.0                                 | o.s                    |
|                |        | 7-             | 309590   |                                    | 3.0                   |                              |                        | õ                      |   | <b>6</b>                | 9.6                                 | 0.6                    |
|                |        | ÷              | 309582   |                                    | 4.0                   | CHARA SPP.                   | <del>0</del>           | ç                      | 2500                                      | 2300                    | <b>8</b> .0                         | 0.3                    |
|                | ,      | 16             |          |                                    | 36.0                  | No Plants Present            |                        |                        | 3000                                      | <b>3</b>                | 3.0                                 | 2.4                    |
|                |        | 17             |          |                                    | 4.0                   |                              |                        |                        | 2700                                      | 8                       | 2.5                                 |                        |
|                |        | 18             |          | 4                                  | 2.5                   | CHARA SPP.                   | <del>0</del> 0         | õ                      | 1900                                      | 1600                    | 0.5                                 | o.3                    |
|                |        | ē              |          | •                                  | 33.0                  | No Plants Present            |                        |                        | 3000                                      | 8                       | 2.5                                 | 2.0                    |
|                |        | 20             | 309620   | 309620 498285                      | 5.9                   | CHARA SPP.                   | <u>\$</u>              | ō                      | 2500                                      | -<br>-<br>-<br>-        | <b>8</b> .0                         | 0.5                    |

Submersed Macrophyte Grapmel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

|       | ISLAND            | GRID     | LORAN         | NA.                | DEPTH         | MACROPHYTE                          | PERCENT                               | WET                                       | LIGH                             | <b>-</b>         | CURRENT                      | ENT             |
|-------|-------------------|----------|---------------|--------------------|---------------|-------------------------------------|---------------------------------------|---|----------------------------------|------------------|------------------------------|-----------------|
|       |                   |          |               | LOWER              | (Ft.)         | TAXON                               | O                                     | WEIGHT                                    | (Foot Candles)<br>Surface Bottom | ndles)<br>Bottos | (Ft./Sec.)<br>Surface Bottom | Sec.)<br>Bottom |
| CLAIR | ST. CLAIR RUSSELL | -        | 308851 488651 | 498651             | 32.0          | No Plants Present                   |                                       |   | 2500                             | 120              |                              |                 |
|       |                   | 7        |               | 309943 498649      | 24.0          | No Plants Present                   |                                       |   |                                  |                  | 180 3.5 2.8                  | 2.8             |
|       |                   | 0        |               |                    | <b>,</b> `` i | No Plants Present                   |                                       |   |                                  |                  |                              | 1.3             |
|       |                   | 7        |               |                    |               | -                                   | <b>排物的转形型物物物的排物物的</b>                 |   | 3800                             | 150              |                              |                 |
|       |                   | ın       | • • • •       | 498657             |               | ίž                                  | 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 해 | #<br>0<br>0<br>1<br>1<br>1<br>1<br>1<br>1 | 3400                             | 280              | 2.6                          | 2.2             |
|       |                   | 9        |               |                    | 13.0          |                                     |                                       |   | 3500                             | 1200             | 3.2                          | 3.1             |
|       |                   | -        |               | 498635             | 0.            | POT. GRAMINEUS<br>CHARA SPP.        | 75                                    | 1100                                      | 3400                             | 1400             | 2.7                          | 2.6             |
|       |                   | 60       |               |                    | 32.0          | No Plants Present                   |                                       |   | u<br>:                           | 96               | 2.7                          | 2.3             |
|       |                   | 0        |               | 498663             | 40.0          | No Plants Present                   |                                       | **************************************    |                                  | 240              |                              | 0.3             |
|       |                   | ō        |               |                    | ±<br>0.       | ELODEA CANADENS<br>POT. RICHARDSONI | 90<br>10                              | 1020                                      | 3400                             | 410              | 1.6                          | 0.3             |
|       |                   | -        |               | 498662             | 4<br>0        | CHARA SPP.                          | <del>0</del>                          | ç   | 3200                             | 1400             | 2.8                          | 0.5             |
|       |                   | 12       |               | 309943 498662      | o.<br>9       | CHARA SPP.<br>Pot. Gramineus        | 000                                   | 20  |                                  | 510              | 2.2                          | 0.6             |
|       |                   | 13       |               | 309925 498660 33.0 | 33.0          | No Plants Present                   |                                       |   | 3700                             | 710              | 2.0                          |                 |
|       |                   | <b>*</b> |               | 309953 498670 5.0  | 0<br>0        | POT. GRAMINEUS<br>CHARA SPP.        | 80<br>20                              | 550                                       | 3400                             | 210              | 2.0                          | 1.7             |

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER   | ISLAND         | GRID                                    | 2      | LORAN                                   | DEPTH      | ¥  | PERCENT                                | WET             | LIGHT                            |          | CURRENT                      | 5              |
|---------|----------------|---|--------|---|------------|--|--|-----------------|----------------------------------|----------|------------------------------|----------------|
| ,       |                | NUMBER                                  | COORD  | COORDINATES pper Lower                  | (Ft.)      |  | COMPOSITION                            | WEIGHT<br>(gr.) | (Foot Candles)<br>Surface Bottom | dies)    | (Ft./Sec.)<br>Surface Bottom | ec.)<br>Bottom |
| DETROIT | 31138<br>BELLE | # ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( |        | 312760 499950                           | 0.         | POT. ZOSTERIFORM<br>VALLISNERIA AMER<br>MYRIO. SPICATUM                                | 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 180             | 4500 600                         | 8        | 0.6                          | <b>o</b>       |
|         |                | 2                                       |        | 4 :                                     | 12.0       | POT. NARROW  | <u></u>                                | 20              | 4600                             | 750      | 2.0                          | 0.3            |
|         |                | ю                                       |        | 1                                       | 0.         | VALLISNERIA AMER<br>POT. NARROW<br>CHARA SPP.  | 70.4<br>O 10. 10                       | Š.              | 4500                             | 8        | <del>-</del>                 | <u>-</u>       |
|         |                | 1 4                                     |        | ë 'i                                    | 24.0       | No Plants Present  |  |                 | 4700                             | <u>.</u> | 2.5                          | 2.0            |
|         |                | 10                                      |        | 312772 499967                           | 15.0       | No Plants Present  |  |                 | 3200                             | 5        | 2.6                          |                |
|         |                | g                                       | 312759 |   |            | No Plants Present  |  |                 | •                                | 8        | 2.6                          | 2.2            |
|         |                |   | 312779 | 48886                                   | 2.0        | POT. RICHARDSONI<br>POT. NARROW<br>POT. CRISPUS<br>VALLISNERIA AMER<br>CHARA SPP.      | 0 60 10 10 10                          | 1350            | 4500                             | 900      | 3500 0.2                     | 0.5            |
|         |                |   |        |   |            | No Plants Present  |  |                 | 3000                             | 5        | 2.6                          | 9.             |
|         |                | H                                       |        | 499973                                  | 35.0       | No Plants Present  |  |                 |                                  | 5        | 2.7                          | 2.0            |
|         |                |   |        | 312796 499978                           | 9.0        | CHARA SPP.   |  | 9               | 4600                             | 8<br>8   |                              | 0.5            |
|         |                |   |        |   | 35.0       | No Plants Present  |  |                 |                                  | 130      | i i                          | 5.0            |
|         |                | 2                                       | 312807 | 4 9 9 9 5                               | 6.0<br>0   | POT. GRAMINEUS<br>CHARA SPP.<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA<br>NAJAS FLEXILIS | 9 <b>8</b> 6777                        | 0,              | 00064                            | 0<br>6   |                              | <b>o</b> . 0   |
|         |                | 13                                      | 312795 | 499982                                  | 34.0       | No Plants Present  |  |                 | 3300                             | 120      | 2.3                          | -              |
|         |                | 7                                       | 312857 | 312857 499995                           | 2.5        | CHARA SPP.<br>Nitellop. Obtusa   | 98                                     | Og              | 4300                             | <b>0</b> | 0.2                          | 0.2            |
|         |                | ខ្                                      | 3 + 28 | 499994                                  | 2.0        | CHARA SPP. NITELLOP. OBTUSA VALLISNERIA AMER MYRIO. SPICATUM                           | ល<br>សភពស<br>ស                         | 50              | 4000                             | 3100     | o<br>2.                      | 0.2            |
|         |                | 9                                       | 312839 | 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 | 9.0<br>0.0 | CHARA SPP. VALLISNERIA AMER NITELLOP. OBTUSA NAJAS FLEXILIS POT. ZOSTERIFORM           | 90<br>67 - 43                          | 250             | 4300                             | 2500     | e.                           | o<br>6.        |

1

| 11                     | 312829   | 312829 499993 1.5 CHARA SPP. | 1.5  | CHA        | RA SPI                  | 1  | <del>1</del> 00  | 5   | 110 4600 3600 0.3 0.3 | 3600             | 0.3         | 0.3          |
|------------------------|--|------------------------------|------|------------|-------------------------|--|--|-----|-----------------------|------------------|-------------|--------------|
| #<br># #<br># #<br># # | 18 312822 499991 12.0 POT. RICHARDSON CHARA SPP. CHARA SPP. VALLISNERIA AME POT. ZOSTERIFOR POT. NARROW  | 312822 499991 12.0           | 12.0 | CHA<br>VAL | RA SPI<br>LISNEI<br>ZOS | H K Z  | 45 440 5000 150 1.1 0.8 45 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 440 | 000g                  | 0<br>0           | 150         | <b>&amp;</b> |
| 10                     | 312806   | 499989                       | 26.0 | 8          | lants                   | 19 312806 499989 26.0 No Plants Present              |  |     | 3900                  | 120              | 120 2.0 1.4 | 7.           |
| 20                     | 312859   | 500002                       | 26.0 | 2          |                         | 20 312859 500002 26.0 No Plants Present 3400 160 1.5 |  |     | 3400                  | 160              | 160 1.6 1.5 | ÷.5          |
| 21                     | 312851   | 200000                       | 25.0 | ۵<br>ک     | ants                    | 21 312851 500000 25.0 No Plants Present              |  |     | 3400                  | 200              | 200 1.6 1.6 | 9.           |
| 22                     | 312839   | 498887                       | 33.0 | 2          | ants                    | 22 312839 499997 33.0 No Plants Present              |  |     | 3700                  | 200              | 200 1.7 1.5 |              |
| 23                     | 312829   | 498886                       | 32.0 | Š          | lants                   | 23 312829 498996 32.0 No Plants Present              |  |     | 4300                  | <b>500</b>       | 200 2.1 2.0 | 5.0<br>0.0   |
|                        | THE PROPERTY OF THE PROPERTY O | 900007                       | 9.4  | 2          | 100                     | 24 21323 400006 24 0 No Plante Present               |  |     | 4200                  | 4200 220 2.8 2.5 | 2.8         | 2.5          |

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER   | ISLAND           | GRID<br>NUMBER | 01<br>02000<br>04000                     | LORAN<br>COORDINATES<br>DOEF LOWER | DEPTH              | MACROPHYTE<br>TAXON             | PERCENT<br>COMPOSITION | WET<br>WEIGHT | LIGHT<br>(Foot Candles)<br>Surface Bottom | T<br>ndles)<br>sottom | CURRENT<br>(Ft./Sec | NT<br>Sec.) |
|---------|------------------|----------------|--|------------------------------------|--------------------|---------------------------------|------------------------|---------------|---|-----------------------|---------------------|-------------|
| DETROIT | DETROIT HENNEPIN |                |  | * 10                               | 31.0               | No Plants Present               |                        |               | 2700                                      | 120                   |                     | 0.5         |
|         |                  | 2              |  | 14059 500666                       | 7.0                | VALLISNERIA AMER<br>POT. NARROW | R 70                   | 1040          | 3800                                      | <u>\$</u>             | o. <del>1</del>     | 0.1         |
|         |                  |                |  |                                    | 33.0               | No Plants Present               |                        | # H           | 1200                                      | 32                    | 9.0                 | 0.3         |
|         |                  | 4              | 314063                                   | 500673                             | 0.                 | <b>4</b>                        | 90<br>00<br>10         | 1210          | 3800                                      | 270                   | 0.3                 | <u>. 0</u>  |
|         |                  | 10             | 31                                       |                                    | 32.0               | No Plants Present               |                        |               | 3400                                      | 130                   | 2.2                 | 2.0         |
|         |                  |                | 6  |                                    | 0.0                | VALLISNERIA AMER                | ~                      | 120           | 5100                                      | 830                   | 4.0                 | 0.5         |
|         |                  | 7              | 5  | •                                  | 7.0                | NARROW                          |                        | 1320          | 000 <b>7</b>                              | <b>5</b>              | 0.2                 | -           |
|         |                  | 60             | 9  |                                    |                    | No Plants Present               |                        |               | 4300                                      | 50                    | 2.0                 | 9.1         |
|         |                  | 6              |  | 500689                             | <u> </u>           | No Plants Present               | 4                      |               | 3600                                      | 5                     | 1.3                 | 0.5         |
|         |                  | ō.             | 314                                      |                                    | <del>1</del> 0.0   | VALLISNERIA AMER                |                        | 160           |   | 270                   | 0.2                 | 0.2         |
|         |                  | 11             | 3  |                                    | 0.0                | VALLISNERIA AMER                |                        | <del>,</del>  |   | 730                   | 0.3                 | 0.2         |
|         |                  | 12             | 9  |                                    | 31.0               | No Plants Present               | <b>.</b>               |               | 1500                                      | S                     | 2.1                 | 4.6         |
|         |                  | 13             | = !                                      |                                    | 29.0               | No Plants Present               |                        |               | 4200                                      | 0                     | <b>8</b> .0         | 0.0         |
|         |                  |                | 314086                                   | 5 500693                           | °.                 |                                 | ~ ~                    | <b>Q</b>      | <b>.</b><br>8                             | 8                     | O                   | <b>0</b> .4 |
|         | •                | 5              | 314076                                   | 500692                             |                    | VALLISNERIA AMER                | 100                    | 09            | 4500                                      | 8                     | 0.4                 | 0.3         |
|         |                  | 16             | ÷  | 200690                             | 31.0               |                                 |                        |               | 4700                                      | 170                   | 1.6                 | 1.2         |
|         | •                | 17             | Ė  | 1105 500702                        | 25.0               | No Plants Present               | 4                      |               | 000 <del>1</del>                          | <u>\$</u>             | 1.3                 | 0.5         |
|         |                  |                | : = !                                    | • 1                                | <u>1</u> .0        | VALLISNERIA AMER                | -                      | <u>\$</u>     | 2000                                      | <u>ē</u>              | o. <del>1</del>     | 0<br>- 1    |
|         |                  |                | 6  | i - i                              | 10<br>10           | VALLISNERIA AMER<br>CHARA SPP.  |                        | 40            | 4800                                      | <u>\$</u>             | 0<br>-              | 0.1         |
|         |                  | 20             | = !                                      |                                    | 30.0               | No Plants Present               | بد                     |               | 4600                                      | 130                   | <b>1</b> .6         | ÷           |
|         |                  | 21             | 3  | 4108 500709                        | 27.0               | No Plants Present               | بد                     |               | 4200                                      | 110                   |                     | -<br>0.     |
|         |                  | 22             | 9  | 5 500707                           | <del>.</del><br>0. | VALLISNERIA AMER<br>Pot. Narrow | 00 <del>0</del>        | 40            | s <del>1</del> 00                         | 360                   | 9.0                 | 0<br>4      |
|         |                  | 23             | 314084                                   | 500706                             | 5.0<br>5.0         | VALLISNERIA AMER<br>CHARA SPP.  |                        | 180           | 4000                                      | 110                   | o.3                 | 0.5         |
|         |                  |                | 1 月月日日日日 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | " 我们我我们们!"                         |                    |                                 |                        |               |   |                       |                     |             |

| 24         | 314074 | 314074 500705      | 30.0       | ž  |         | 4000         | 180          | <b>1</b> .8 | 4.0                 |
|------------|--------|--------------------|------------|--|---------|--------------|--------------|-------------|---------------------|
| 25         | 314112 |                    | 23.0       | No Plants Present                        |         | 3900         | <u>8</u>     | 0.          | 0.0                 |
| <b>5</b> 6 | 314099 | 314099 500714      | 15.0       | VALLISNERÍA AMER 100                     | 40      | 4300         | <u>\$</u>    | 0.3         | 0.5                 |
| 27         | 1      |                    |            | VALLISNERIA AMER<br>CHARA SPP.           | 8       | 3800         |              | <b>o</b> .• | 0.2                 |
| 28         |        | 314078 500711 31.0 | 31.0       |  | 4800    | 4800         | 0 <b>6</b> 1 | 2.0         | 2.0                 |
| 29         | 314114 | 500721             |            | ent.                                     |         | * (7)        | 0            |             | 0.4                 |
| 8          | 314102 | 314102 500719      | <b>i</b> ! | CHARA SPP. 80<br>VALLISNERIA AMER 20     | 09      | 4800         | 320          | <b>6.</b>   | 0.1                 |
| 31         | 314094 | 314094 500719      |            | VALLISNERIA AMER 98<br>Myrio. Spicatum 2 | 98      | 3500         | 150          | 0.3         | 0.2                 |
| 32         | 314062 | 5007 19            |            | No Plants Present                        |         | 1500         | OS<br>S      | 2.4         | 2.0                 |
| 33         | 314107 | 500727             | 22.0       | No Plants Present                        |         | 3800         | 6            | 0.2         | 0.0                 |
| 34         | 314098 | 314098 500726      | 7.0        | VALLISNERIA AMER                         | 100 240 | 000 <b>7</b> | <u>\$</u>    | 0.2         | 0.                  |
| 36         | 314087 | 314087 500726      |            | No Plants Present                        |         | 4700         | 53           | 2.0         | -                   |
| 9e         | 314111 | 314111 500733      | 17.0       | No Plants Present                        |         | 3300         | 110          | 0.4         | 0.3                 |
| 37         | 314103 | 314103 500733      | £0         |  | 200     | 4000         | <b>9</b>     |             | 0.3                 |
| 38         | 314093 | 314083 500733      | 30.0       | No Plants Present                        |         | 2800         | 120          | 2.0         | 1.6                 |
| 38         | 314115 | 314115 500740      | 22.0       | No Plants Present                        |         | 3400         | 1 10         | 1.3         | <del>-</del>        |
| ę          | 314109 | 314109 500742      | 15.0       | No Plants Present                        |         | 3800         | <b>36</b> 0  | 1.5         | <b>-</b> . <b>-</b> |

| RIVER   | RIVER ISLAND | GRID<br>NUMBER | <b>-</b> | LORAN<br>COORDINATES<br>PPET LOWER | DEPTH<br>(Ft.)  | MACROPHYTE<br>TAXON                                     | PERCENT<br>COMPOSITION | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | odles)    | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | NT<br>Bottom |
|---------|--------------|----------------|----------|------------------------------------|-----------------|---|------------------------|------------------------|---|-----------|---|--------------|
| DETROIT | )            | -              |          |                                    | စ<br>စ          | VALLISNERIA AMER<br>POT. ZOSTERIFORM                    | 8<br>0<br>0            | <b>58</b> 0            | 3500                                      | S<br>C    | 1.5                                     | e            |
|         |              | 7              | 6        | ו מו                               | <b>6</b> 0      | POT. NARROW<br>VALLISNERIA AMER<br>POT. RICHARDSONI     | 80.                    | 2000                   | 2 100                                     | 120       | . O                                     | o. 5         |
|         |              | က              |          | 500973                             | 7.0             | LISNERIA  | <del>0</del>           | 620                    | 1700                                      | 8         | 1.4                                     | 0.7          |
|         |              | 4              | 314200   | 500972                             | 0.6             | VALLISNERIA AMER<br>Pot. Narrow                         | 98                     | <b>8</b>               | 2500                                      | 6         | O. 5                                    | <b>o</b> .   |
|         |              | sc.            | 314191   | 500972                             | o.<br>6         | POT. NARROW<br>ELODEA CANADENS<br>POT. CRISPUS          | 88<br>80<br>7          | 9                      | 3500                                      | 280       | 9.0                                     | 0.3          |
|         |              | ဗ              | 314232   | 500979                             | <b>9</b><br>0.0 |   | 66                     | 200                    | 3200                                      | 02        | 0                                       | 0.7          |
|         |              | 7              | 314223   | 500980                             | 7.0             | POT. NARROW<br>VALLISNERIA AMER                         | 80<br>70               | 1720                   | 4600                                      | 320       | 0.1                                     | 0.7          |
|         |              | 60             | 314209   | 500979                             | 2.0             | No Plants Present                                       |                        |                        | 2500                                      | 250       | 0.1                                     | 4.4          |
|         |              | o.             | : :      | •                                  | 2.0             | VALLISNERIA AMER<br>HETERANTHERA DUB                    | 90<br>0                | 140                    | 2500                                      | <b>\$</b> | e. 1                                    | O.8          |
|         |              | ō              | 314192   | 500977                             | ō.0             | No Plants Present                                       |                        |                        | 2300                                      | %<br>%    | 0.9                                     | 0.5          |
|         |              | Ę              |          |                                    | 7.0             | No Plants Present                                       |                        |                        | 1200<br>1200                              | <u>\$</u> | 1.2                                     | -            |
|         |              | 12             | 314      |                                    | 9.0             | MYRIG. SPICATUM<br>ELODEA CANADENS<br>HETERANTHERA DUB  | 8 8 8                  | 1480                   | 300e                                      | 520       | e.<br>0                                 | 0.2          |
| •       |              | 13             | !!       | 314220 500988                      | 3.0             | HETERANTHERA DUB<br>ELODEA CANADENS<br>BUTOMUS UMBELLAT | 98<br>2<br>41          | 680                    | 4500                                      | 1500      | 0.0                                     | 0.0          |
|         |              | 4              | !!       | 500994                             | -<br>0.         | No Plants Present                                       |                        |                        | 3500                                      | 120       | 2.6                                     | 2.2          |
|         |              | 5              |          | 314244 500993                      | 5.0             | VALLISNERIA AMER  | 00<br>1                | 340                    | -<br>-<br>-<br>-                          | ÷         | 1.6                                     | 0            |
|         |              | 16             | !!       | 314236 500994                      | 9.0             | MYRIO. SPICATUM   | <del>0</del>           | 120                    | 4400                                      | 2200      | 0.6                                     | 9.0          |
|         |              | 17             | : :      | 500994                             | 2.0             | HETERANTHERA DUB  | <u>\$</u>              | 350                    | 2100                                      | -1500     | 0.4                                     | 0.2          |
|         |              | <del>6</del>   | 314261   | 501001                             | 11.0            | No Plants Present                                       |                        |                        | 4 100                                     | 330.      | 2.7                                     | 1.7          |
|         |              | <del>0</del>   | 314251   | 501001                             | 9.0<br>0        | MYRIO. SPICATUM<br>HETERANTHERA DUB<br>VALLISNERIA AMER | 80<br>00<br>00<br>00   | 140                    | 3600                                      | -<br>100  | ٠.<br>ت                                 | 0.5          |

J-19

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER ISLAND   | ISLAND | GRID<br>NUMBER | LOG<br>COORD<br>Upper | LORAN<br>COORDINATES<br>POPER LOWER | DEPTH<br>(Ft.)    | MACROPHYTE<br>TAXON   | PERCENT<br>COMPOSITION                   | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | dles)<br>ottom | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | ENT<br>Sec.)<br>Bottom |
|----------------|--------|----------------|-----------------------|-------------------------------------|-------------------|---|--|------------------------|---|----------------|---|------------------------|
| ST. CLAIR STAG | STAG   | -              | 309030                | 497375                              | 31.5              |   |  |                        | 140                                       |                | 2.9                                     | 2.5                    |
|                |        | 2              | 2 309018 497375       | 497375                              | -<br>0.4          | No Plants Present   |  |                        | 140                                       | <u>8</u>       | 2.8                                     | 2.1                    |
|                |        | e<br>e         | 309045                | 497383                              |                   | No Plants Present   |  |                        | 150                                       | 8              | 2.6                                     | 2.2                    |
|                |        | 4              |                       | 497380                              |                   | No Plants Present   |  |                        | 150                                       | <u>\$</u>      |   | 2.5                    |
|                |        | 6              | 309021                | 497381                              | 10.0              | No Plants Present   |  |                        |   | 8              | 2.4                                     | 2.0                    |
|                |        | g              | . 6                   | 497388                              |                   | Plants  |  |                        | 150                                       | ÷              | 2.4                                     | 2.3                    |
|                |        | 7 3            |                       | 497385                              | 12.0              | Plants Pres   |  |                        | 130                                       | 8              |   | 8                      |
|                |        | 8              | 09024                 | 497386                              |                   | No Plants Present   |  |                        | 120                                       | 8              | 2.3                                     | 2.3                    |
|                |        | 6              | 09048                 | 497393                              | 32.0              | No Plants Present   |  |                        | 190                                       | 140            | 2.7                                     | 2.5                    |
|                |        | ō.             |                       | 497392                              | 11.5              | 1   |  |                        | <u>\$</u>                                 | 6              | 8.                                      | 9.                     |
|                |        | -              | 309027                | 497392                              | 2.0               | 0   |  |                        | <b>6</b>                                  | 88             | 0                                       | 0.0                    |
|                |        | 12 3           | 309051                | 497399                              | 16.5              | No Plants Present   |  |                        | 220                                       | 170            | 9.                                      | 1.7                    |
|                |        | £.             | 30903                 | 497398                              | بر<br>دو          | CHARA SPP.<br>Pot. Gramineus  | 75<br>25                                 | 160                    | 70  | S.             | <b>6</b> .0                             | o<br>.s                |
|                |        | 7              | 309033                | 497398                              | 2.0               | CHARA SPP.<br>Pot. Gramineus  | 70<br>30                                 |                        | 9   | 8              | o.                                      | <b>6</b> .0            |
|                |        | 15             | 09063                 | 497404                              | 33.0              | Ē   |  |                        | <b>20</b> 0.                              | 170            | .0                                      | 2.7                    |
|                |        | £              | 09054                 | 497405                              | 16.0              | No Plants Present   |  |                        | 220                                       | 160            | 2.1                                     | 2.1                    |
|                |        | 17             | 09043                 | 497405                              | ±<br>0.           | POT. NARROW<br>POT. RICHARDSONI                                     | 80<br>20                                 | <b>910</b>             | 09  | ç              | <b>.</b>                                | 0.2                    |
|                |        | £              | 308036                | 497404                              | 2.0               | CHARA SPP.  | 8  | ō                      | 57  | 56             | <b>6</b> .0                             | 8<br>0                 |
|                |        | 19             |                       | 497410                              | 24.0              | No Plants Present   |  |                        | 200                                       | 150            | 2.0                                     | 2.0                    |
|                |        |                | 309059                | 497411                              | <del>1</del><br>0 | POT. RICHARDSONI<br>VALLISNERIA AMER                                | 90<br>91                                 | 170                    | 170                                       | <del>.</del>   | <b>9</b> .0                             | 4.0                    |
|                |        | 21             | 309044                | 497410                              | မ<br>မ            | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>ELODEA CANADENS | 80 T T T T T T T T T T T T T T T T T T T | 260                    | 0,  | O<br>O         | 9.<br>O                                 | o.<br>3                |
|                |        | 22             | 22 309073 497416      | 497416                              | 33.0              | No Plants Present   |  |                        | 270                                       | 300<br>200     | 2.8                                     | 2.8                    |
|                |        | 23             | 309066                | 309066 497416                       | 16.0              | CHARA SPP.  | 100                                      | 20                     | 210                                       | 120            | £.                                      | 9.0                    |

|   | 5.6                                     |   | 2.8   |
|---|---|---|---|
| ****                                      | 3.2                                     |   | 3.1   |
|   | 290 200 3.2 2.6                         | 350   | 230 220 3.1 2.8   |
|   | 290                                     |   | 230   |
| ****                                      |   | , in  |   |
| 电池物料混合环间间接物品环间的银行                         |   | 100   |   |
| ï   | ē                                       |   |   |
| *   | 7                                       |   | Į   |
| ****                                      | nts Pres                                | SPP.  | nts Pr  |
| 计分类 计多数 医多种 医多种 医多种                       | No Plants Pres                          | CHARA SPP.  | No Plants Pre   |
| 化多氯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 | 33.0 No Plants Pres                     | 3.0 CHARA SPP.  | 34.0 No Plants Pre                                      |
| 计放射机 电电子电阻 医电子管 医口管性医疗性神经炎的现在分词           | 497424 33.0 No Plants Pres              | 497421 3.0 CHARA SPP.                                 | 497436 34.0 No Plants Pre                               |
|   | 24 309079 497424 33.0 No Plants Present | 25 309069 497421 3.0 CHARA SPP. 100 5 390 350 1.1 1.1 | 26 309087 497436 34.0 No Plants Present 230 220 3.1 2.8 |

5-21

| ex :           | ISLA | GRID   | COORD1   | LORAN<br>COORDINATES<br>PPOF LOWER | DEPTH<br>(Ft.) | MACROPHYTE<br>TAXON  | PERCENT<br>COMPOSITION                  | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | dles)<br>Sottom   | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | NT<br>BC.)<br>Bottom |
|----------------|------|--|----------|------------------------------------|----------------|--|---|------------------------|---|-------------------|---|----------------------|
| ST. CLAIR FAWN | FAW  |  |          | 498257                             |                | No Plants Present  | 1 # A # A # A # A # A # A # A # A # A # |                        |   | 670               | ; _                                     | 9.1                  |
|                |      | 8  | <b>.</b> | 309566 498246                      | 16.0           | POT. NARROW<br>CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI                               | 65<br>7                                 | 1                      | 3300                                      | 730               | 2                                       | #<br># <del>-</del>  |
|                |      | 6  |          |                                    | 22.5           | No Plants Present  |   |                        | 1800                                      | 200               | 2.8                                     | 2.3                  |
|                |      | 7  | 309569   | 498251                             | 12.0           | POT. NARROW  | <u>6</u>                                | 182                    | 3200                                      | ÷                 | . d                                     | 0.                   |
|                |      | ID.  | ! !      | 498257                             | 24.0           |  |   |                        | 2 100                                     | 580               | 2.6                                     | 2.6                  |
|                |      | φ  |          | 498257                             | o.             | POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW<br>CHARA SPP.                                | លេយលេព<br>ពេលយ                          | 4830                   | 1300                                      | 36                | 0.1                                     | 0.0                  |
|                |      |  | i i      | 498257                             | 7.0            | I N  | 09 <b>4</b>                             | 722                    | 3200                                      | 2400              | <b>0</b> .0                             | 6.<br>0              |
|                |      | 40   | 309608   | 498263                             |                | No Plants Present  |   |                        | 3300                                      | 630               | . G.                                    | 0.5                  |
|                |      | 0  |          | 309599 498262                      | -              | No Plants Present  |   |                        | 2300                                      | 570               | 2.6                                     | 7.                   |
|                |      | 0  | 309587   | 498262                             | 3.0            | CHARA SPP.   | 100                                     | -6                     | 1300                                      | <u>0</u>          | 0.0                                     | 0.7                  |
|                |      | -  | <b>!</b> | 309575 498262                      | 0.             | CHARA SPP.<br>POT. RICHARDSONI<br>ELODEA CANADENS  | 98<br>38<br>3                           | <b>9</b> 2             | 9600                                      | 2500              | <b>.</b> 0                              | 9.<br>0              |
|                |      |  |          | 498269                             | -              | No Plants Present  |   |                        | 3000                                      | 780               | 2.5                                     | 1.9                  |
|                |      | 13   |          | 308501 498267                      | i i            | CHARA SPP.<br>Pot. Gramineus   | <b>8</b> 0                              | 162                    | 2200                                      | 1600              | o.s                                     | o.3                  |
|                |      | 4  | 10       | 09590 498268                       | 2.5            | POT. GRAMINEUS<br>CHARA SPP.   | 90 00                                   | 80                     | 1000<br>1000                              | <b>0</b>          | 0.5                                     | O.3                  |
|                |      | ÷  |          | 498268                             | 3.0            | CHARA SPP.   | <del>-</del> 00                         | 16                     | 3800                                      | 000<br>000<br>000 | o.<br>-                                 | <b>6</b> 0           |
|                |      | 16   | 309625   | 309625 498275                      | 39.0           | No Plants Present  |   |                        | 3500                                      | <u>.</u><br>8     | 2.4                                     | 2.3                  |
|                |      | 4  | 309613   | 498275                             | 15.0           | POT. RICHARDSONI<br>VALLISNERIA AMER<br>NITELLA HYALINA<br>NITELLOP. OBTUSA<br>ELODEA CANADENS | 46.00 m m                               | 142                    | 2900                                      | 520               | Q<br>                                   | 6.<br>O              |
|                |      | 4<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 309606   | 498276                             | 2.2            | CHARA SPP.<br>POT. GRAMINEUS<br>ELODEA CANADENS  | 69<br>30<br>+                           | 218                    | 1800                                      | 510               | e.0                                     | 0.0                  |

| 植物 经存货 医甲状腺 医多种 | 2300 1300 2.3 1.9 | 9°0 10 COOC COOC COC |        | CHARA SPP. 7 | POT. GRAMINEUS 7 | NAJAS FLEXILIS 1 |
|---|-------------------|----------------------|--------|--------------|------------------|------------------|
|   | 34.0 No           | ***                  | 9.0    | O            |                  | ~                |
|   | 498279            |                      | 498282 |              |                  |                  |
|   | 300606            |                      | 309619 |              |                  |                  |
|   | *<br>*<br>* a     |                      | 0      | ,            |                  |                  |

(

J-23

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2 Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

| RIVER               | ISLAND  | GRID                            |                  | LORAN<br>COORDINATES<br>PPPF LOWER | <b>DEPTH (Ft.)</b> |  | PERCENT<br>COMPOSITION | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | T<br>ndles)<br>Bottom | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | ENT<br>Sec.)<br>Bottom |
|---------------------|---------|---------------------------------|------------------|------------------------------------|--------------------|--|------------------------|------------------------|---|-----------------------|---|------------------------|
| ST. CLAIR RUSSELL 1 | RUSSELL |                                 |                  | 309950 498649                      | 27.0               |  |                        |                        | * :                                       |                       | 3. 4                                    | 3,1 3.1                |
|                     |         | 7                               | 309941           | 309941 498647                      |                    |  |                        |                        |   |                       | 2.6                                     |                        |
|                     |         |                                 | 309930           | . 4                                | . ~                | No Plants Present                              |                        |                        |   | 930                   | 0.                                      |                        |
|                     |         | 7                               | 309973           | 309973 498651                      | , ,                | No Plants Present                              |                        |                        |   | 760                   | i i                                     | 2.8                    |
|                     |         | 10                              | 309961           | 309961 498654                      | 25.0               | No Plants Present                              |                        |                        | 3400                                      | 8                     |   | 2.2                    |
|                     |         | <b>9</b>                        |                  | 308952 498654                      | <b>6</b> .0        |  | <b>8</b> 0             | 3200                   | 320                                       | č<br>Š                | 4.0                                     | 0.7                    |
|                     |         |                                 |                  | 309945 498653                      | 0.4                | POT. GRAMINEUS<br>POT. NARROW<br>CHARA SPP.    | 8 6 5<br>5 5           | 1000                   | 00 <b>6</b>                               | 9<br>0                |   | <b>6</b> 9.            |
|                     |         | 8                               | 308932           | 309932 498653                      | 33.0               | No Plants Present                              |                        |                        |   | <u>\$</u>             |   | 2.0                    |
|                     |         | #<br>#<br>#<br>#<br>#<br>#<br># |                  | 309980 498661 33.0                 | 33.0               | No Plants Present                              |                        |                        | 9   | 700                   | 2.6                                     | 2.2                    |
|                     |         | 9                               | 309968 49866     | 309968 498661                      | 0.4                | CHARA SPP.<br>Pot. Gramineus                   | 96<br>0                | 224                    |   | 2000                  | 0.7                                     | o .s                   |
|                     |         |                                 |                  | 309958 498660                      | ຕ<br>ທ             | POT. GRAMINEUS<br>CHARA SPP.<br>NAJAS FLEXILIS | 80<br>148<br>2         | <b>6</b>               | 2000                                      | 1900                  | 1.2                                     | 0.7                    |
|                     |         | 42                              | 308947           | 309947 498661                      |                    | CHARA SPP.<br>Pot. Gramineus                   | 60<br>40               | 50                     |   | 1500                  |   | 0.<br>4                |
|                     |         | 13                              | 13 309936 498660 | 498660                             | 0.04               | No Plants Present                              |                        |                        | 3500                                      | 820                   | 2.1                                     | 2.0                    |
|                     |         | 14                              | 309948           | 309948 498668 34.0                 | 34.0               | No Plants Present                              |                        |                        |   | 840                   | 2.4                                     | 2.3                    |

| Submersed Macrophyte Grapnel Data, SEPTEMBER, | RIVER ISLAND GRID LORAN DEP<br>NUMBER COORDINATES<br>Upper Lower (Ft | 312758 499948 | 2 312752 499947                       | 3 312763 499955 | 4 312755 499955 | 312770 499961 | 312758 499963 | 312777 499963        | ) (                    | 312774 499971 | 10 312794 499975 4.0 | 312784 499978 | 312807 499982 | 3 312794 499979        | 312656 499992 |                  | 16 312837 499989 3  |
|---|--|---------------|---------------------------------------|-----------------|-----------------|---------------|---------------|----------------------|------------------------|---------------|----------------------|---------------|---------------|------------------------|---------------|------------------|---|
| 1983  | TH MACROPHYTE<br>TAXON   | POT. R        | 10.0 No Plants Present                | : :             |                 |               |               |                      | 28.0 No Pients Present | :             |                      | #             |               | 33.0 No Plants Present | o.            | o.               | I.O NAUAS FLEXILIS VALLISNERIA AMER CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM NITELLOP. OBTUSA |
|   | PERCENT<br>COMPOSITION   | 90<br>90      |                                       |                 |                 |               |               | 90<br>00<br>10<br>10 |                        |               | 200<br>200<br>8      |               | <del>.</del>  |                        | <b>8</b> 5 5  | <u>გ</u> ტ ტ თ ო | 6 2 2 5 m m   |
| Note: 1.                                      | WET<br>WEIGHT<br>(gm.)   | 4520          | M   M   M   M   M   M   M   M   M   M |                 |                 |               |               | 3540                 |                        |               | 90                   |               | 50            |                        | 170           | 430              | 450   |
| (-) indicates<br>(*) indicates                | LIGHT<br>(Foot Candles)<br>Surface Bottom                            | 4000          |                                       |                 |                 |               | *             |                      | 3600                   | 8             |                      | 610           |               |                        |               |                  | 3300  |
| ĒV  |  | 280           | 300                                   | 8               | 8               | 270           | 7             | 700                  | -<br>-<br>-<br>-       | 75            | 1800<br>0081         | 8             | 190           | 43                     | 900           | 2000             | 00E   |
| missing da<br>< 0.100 g/                      | CURRENT<br>(Ft./Sec.)<br>Surface Bottom                              | 0.7           | 1.7                                   | 2.0             | 1.7             | 2.1           |               | 0.3                  | 4.9                    | 3. 1          | 9.<br>O              | 2.6           | 6.1           |                        |               | 0.2              | <b>n</b> .  |
| data<br>g/m2                                  | r.)  | 0.            | -                                     | 5.              | 0               | 4.            | 9.0           | o.<br>0              | 6.                     | 9.0           | <b>₹</b> .           | 2.5           | <del>-</del>  | 2.6                    | 0.0           | 0                | <u>-</u>  |

į

|           |   |                    |                              |   | ¥   | AS FLE  | NAJAS FLEXILIS  | 20                |      |  |              |            |        |
|-----------|---|--------------------|------------------------------|---|---|---|---|-------------------|------|--|--------------|------------|--------|
| <b>\$</b> | 18 312821 499989 11.0 CHARA SPP. POT. GRAMINEUS NAJAS FLEXILIS POT. RICHARDSONI NITELLOP. OBTUSA ELODEA CANADENS VALLISNERIA AMER | 312821 499989 11.0 | n -<br>n <del>-</del><br>n - |   | NAL NOT | CHARA SPP. CHARA SPP. NAJAS FLEXILIS POT. RICHARDSO NITELLOP. OBTU ELODEA CANADEN VALLISNERIA AM POT. CRISPUS | CHARA SPP. CHARA SPP. NAJAS FLEXILIS NOTELLOP. OBTUSA ELUDEA CANABENS VALLISNERIA AMER POT. CRISPUS | 8 8 8 5 p p s 4 - | 2600 | 35 2600 3700 1200 0.3 0.0 25 15 10 10 10 10 11 11 11 11 11 11 11 11 11 | 1200<br>1200 | e.<br>O    | o<br>o |
| 9         | 312805  | 499987             | 93                           |   | 9   | ) ante  | 19 312805 499987 35.0 No Plants Present 530 26 2.7 2.5  |                   |      | 530  | 28           | 2.7        | 2.5    |
| 20        | 312860  | 499998             | 26.                          | 5 | 9   | ) ants  | 20 312860 499998 26.5 No Plants Present   |                   |      | 1300   | <b>46</b>    | 9.+        | 1.3    |
| 21        | 312849  | 499997             | 26.                          | 0 | 9   | 1.mts   | 21 312849 499997 26.0 No Plants Present   |                   |      | 820  | 13           | 13 1.6     | 1.7    |
| 22        | 312839  | 499994             | 2                            |   | 9   | 1ants   | 22 312839 499994 21.0 No Plants Present   |                   |      | 3900   | 49           | <b>4.5</b> | 4.5    |
| 23        | 312828  | 499994             | 34.                          | - | 9   | ) ants  | 23 312828 499994 34.0 No Plants Present   |                   |      | 4300   | 87           | 2.3        | 1.7    |
| 24        | essekteenenenenenenentenenenenenenenenenene   | 499992             | 32                           |   | 9   | ) ants  | 24 2.0821 A0000 33.0 No Plants Present  |                   |      | 2 100  | 34           | 34 1.6     | 2.0    |

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

Ĺ

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| R1VER   | RIVER ISLAND GRID<br>NUMBE | GR I D<br>NUMBER | → :        | LORAN<br>COORDINATES<br>PPer Lower | DEPTH<br>(Ft.) | MACROPHYTE<br>TAXON   | PEF                 | PERCENT<br>COMPOSITION | WET<br>WEIGHT<br>(gm.) | LighT<br>(Foot Candles)<br>Surface Bottom                         | iles)<br>ottom | שו אים      | NT<br>ec.)<br>Bottom |
|---------|----------------------------|------------------|------------|------------------------------------|----------------|---|---------------------|------------------------|------------------------|---|----------------|-------------|----------------------|
| DETROIT | HENNEPIN                   |                  |            | 314069 500667                      | 33.0           | No Plants Present   | ent                 |                        |                        | 650 55  | 52             |             | <del>-</del><br>0    |
|         |                            | 2                |            | 314060 500663                      | 7.0            | VALLISNERIA AI<br>POT. NARROW   | AMER                | 97<br>3                | 562                    | 3400  | 650            | 0.4         | 0.2                  |
|         |                            |                  |            | 314077 500671                      | 35.5           |   | •nt                 |                        |                        | <b>20</b>   | <b>4</b> 6     | 0.0         | 0<br>.0              |
|         |                            |                  |            |                                    | 6.5            | VALLISNERIA A   |                     | ф<br>6                 | 268                    | 3100  | 180            | 0.2         | 0.0                  |
|         |                            | 'n               | 14054      |                                    | 36.0           | No Plants Present   |                     |                        |                        | 330   | 48             | 1.5         |                      |
|         |                            |                  | 314081     |                                    | 33.0           | No Plants Present   |                     |                        |                        | 550   | 8              |             | -<br>0.              |
|         |                            | 7                |            | 500678                             | 0.9            | NERIA<br>LONGI  | AMER<br>Rost        | 66                     | 89.4                   | 3600  | 870            | 0.4         | 0.0                  |
|         |                            | 60               |            | <b>.</b>                           | 35.0           | No Plants Present   | <b>6</b> 04         |                        |                        | 390   | 65             | 1.7         |                      |
|         |                            | 0                |            | 500689                             | 25.0           | No Plants Present   | ient                |                        |                        | 250   | 35             | 1.6         | 0.8                  |
|         |                            |                  |            | 500687                             | 7.0            | <u>₹</u> 8  | AMER<br>TUSA        | 88<br>-                | 352                    | 2100  | 230            | <b>9</b> .0 | 0                    |
|         |                            |                  | 314074     | : <b>-</b> '                       | 6.0            | VALLISNERIA AMER<br>CHARA SPP.<br>ELODEA CANADENS                     | MER                 | 0.<br>4.00             | 275                    | 3100  | 1200           | o. a        | o.3                  |
|         |                            | 12               |            |                                    | 34.0           | No Plants Present   | ent                 |                        |                        | 200   | 35             | 4.8         | 1.2                  |
|         | -                          | 40               | <b>H</b> 1 |                                    | 23.0           | No Plants Present   | ent                 |                        |                        | <b>18</b> 0   | 63             | 1.7         | 0.8                  |
|         |                            | 4-               |            | 500692                             | 0.<br>9        | VALLISNERIA AMER<br>POT. NARROW                                       | AMER                | 99<br>-                | 386                    | 3200  | <b>7</b>       | 0.1         | 0.4                  |
|         |                            | ស៊               | 314079     | ואו                                | <b>6</b> 0     | VALLISNERIA AMER<br>CHARA SPP.<br>MYRIO. SPICATUM<br>NITELLOP. OBTUSA | AMER<br>TUM<br>TUSA | 88 4 + +               | 96<br>9                | 000<br>000<br>000<br>000<br>000<br>000<br>000<br>000<br>000<br>00 | 06 <b>4</b>    | 0.2         | ō<br>Ö               |
|         |                            |                  | 1          | 500694                             | 27.0           | No Plants Present   | ent                 |                        |                        | 300   | 6              | 1.3         | 1.0                  |
|         |                            | ,                | 314104     | 314104 500703                      | 25.0           | No Plants Present   | ent                 |                        |                        | 650   | တ္ထ            |             | 0.7                  |
|         |                            |                  | 314        |                                    | 0.<br>9        | SNER I A<br>SPP.  | AMER                | 90<br>-                | 170                    | 3400  | 880            | 0.2         | 0.1                  |
|         |                            | 6                | 314083     |                                    | 0.7            | ISNERIA<br>Richare<br>A SPP.  | AMER<br>Sijni       | 960<br>-               | 2<br>28<br>28          | 3400  | 1600           | O.3         | •<br>•               |
|         |                            | 20               | 314073     | 500702                             | 25.0           | No Plants Pres  | sent                |                        |                        | 200   | 48             | £.          | -                    |

| 21        |                  | 500708        | 22.0        | 314108 500708 22.0 No Plants Present   |   |          | 750  | 140        | <b>6</b> .0 | <b>8</b>     |
|-----------|------------------|---------------|-------------|--|---|----------|------|------------|-------------|--------------|
| 22        |                  | 314096 500708 | 7.0         | CHARA SPP.<br>VALLISNERIA AMER<br>POT. NARROW  | ဝို အား   | <b>0</b> | 3300 | 630        | 0.2         | o.<br>-      |
| 23        | 314087           | 314087 500706 | o.<br>ø     | VALLISNERIA AMER<br>MYRIO. SPICATUM<br>POT. NARROW<br>CHARA SPP.<br>POT. NARROW<br>ELODEA CANADENS | <b>5</b> 5544 <i>4</i>  | 09       | 3800 | <u>6</u>   | 0.2         | 0.0          |
| 24        | 314076           | 500707        | 26.0        | No Plants Present  |   |          | 1200 | in<br>in   | 1.7         | o.<br>-      |
| 25        | 314111           | 500716        | 23.0        | No Plants Pre  |   |          | 909  | <u>§</u>   | 0.7         | 9.0          |
| <b>56</b> | 314101           |               | 12.0        | !!!  |   |          | 3300 | 480        | 9.<br>0     | o.           |
| 27        | 314092           | 314092 500712 | <b>9</b> .0 | VALLISNERIA AMER<br>CHARA SPP.<br>MYRIO. SPICATUM  | 50 Q  | â        | 2900 | 0          | o.3         | 0.2          |
| 28        | 314080           |               | 32.0        | No Plants Present  |   |          | 450  | 7.1        | . (         | -            |
| 29        | 314116           |               | 13.0        | 13.0 No Plants Present   |   |          | 1200 | 75         |             | 0.5          |
| 30        | 314104           |               | 25.0        | No Plants Present  |   |          | 950  | <b>6</b>   | 0.7         | 0.3          |
| 31        | 31 314096 500722 |               | 7.0         | 7.0 VALLISNERIA AMER<br>CHARA SPP.   |   | 192      | 2700 | 980<br>280 | e.<br>0     | o<br>•       |
| 32        | 314086           |               | 33.0        |  |   |          | 490  | \$         | 2.3         | <b>0</b> .0  |
| 33        | 314111           |               | 27.0        | No Plants Present  |   |          | 650  | 250        | O.0         | 0.5          |
| £.        | 314101           |               | 7.0         | • !  | gs  | 89<br>60 | 2700 | 260        | 0.2         | <del>-</del> |
| 32        | 314092           |               | 34.0        |  |   |          | 550  |            | 2.0         | <del>-</del> |
| 36        |                  |               | 27.0        |  |   |          | 200  | i i        | <b>.</b> .  | 0.7          |
| 37        |                  | 500736        | 0.<br>0.    | VALLISNERIA<br>POT. NARROW   |   | 206      | 3000 | 240        | 0.2         | 0.2          |
| 38        | 314098           |               | 33.0        |  |   |          | 280  | 48         | 2.5         | 5.           |
| 38        | 314120           | 314120 500744 | 31.0        | No Plants Present  |   |          | 000  | 89         | <b>6</b> .0 | o<br>G       |
| 40        | 314113           | 314113 500746 | 20.0        | 314113 500746 20.0 No Plants Present   | -<br> | <br>     | 1600 | 140        | 2.0         | 4.           |

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| 1983       |
|------------|
| SEPTEMBER, |
| Data.      |
| Grapne 1   |
| Macrophyte |
| Submersed  |

| RIVER   | ISLAND | GRID<br>NUMBER | COORD<br>Upper | LORAN<br>COORDINATES<br>PPer Lower | DEPTH<br>(Ft.)        | MACROPHYTE<br>TAXON                  | PERCENT<br>COMPOSITION | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | HT<br>andles)<br>Bottom | CURRENT<br>(Ft./Sec.<br>Surface Bot | ENT<br>Sec.)<br>Bottom |
|---------|--------|----------------|----------------|------------------------------------|-----------------------|--------------------------------------|------------------------|------------------------|---|-------------------------|-------------------------------------|------------------------|
| DETROIT | STONEY | + H            |                |                                    | 7.0                   | VALLISNERIA AMER                     | <u>6</u>               | 582                    | 1300                                      | 33                      | 1.3                                 | 0.5                    |
|         |        |                |                |                                    | o.                    | I SNERIA A<br>NARROW                 |                        | 1208                   | 1000                                      | 130                     | 0.5                                 | 0<br>-                 |
|         |        |                | 314208         | 500974                             | æ<br>vo               | VALLISNERIA AMER<br>MYRIO. SPICATUM  |                        | 470                    | 1000                                      | 130                     | 4.0                                 | 0.1                    |
|         |        | 4              | 314198         | 500973                             | o.<br>0               | VALLISNERIA AMER                     | 100                    | 1400                   | 750                                       | 4                       | 0.5                                 | 0.4                    |
|         |        | es             |                |                                    | 0. <b>6</b>           | VALLISNERIA AMER<br>HETERANTHERA DUB |                        | 738                    | 480                                       | 88                      | 6.<br>0                             | 0.2                    |
|         |        | 9              | 314233         | 500982                             | 14.5                  | No Plants Present                    |                        |                        | 1100                                      | 720                     | 2.6                                 | 1.6                    |
|         |        | 7              | 314221         | • (                                | 0.<br>9               | VALLISNERIA AMER<br>HETERANTHERA DUB |                        | 1104                   | 700                                       | 180                     | <b>8</b> .0                         | 0.                     |
|         |        | 60             | 314210         |                                    | 13.0                  | VALLISNERIA AMER<br>HETERANTHERA DUB |                        | 78                     | 650                                       | 5°                      | 0                                   | <b>6</b> .0            |
|         |        | o.             | 314200         | S                                  | 10.0                  | MYRIO. SPICATUM<br>HETERANTHERA DUB  | 80<br>20               | 08                     | 200                                       | 5<br>40                 | <b>0</b> .4                         | 0.5                    |
|         |        |                | 314190         |                                    | -<br>-<br>-<br>-<br>- | No Plants Present                    |                        |                        | 480                                       | ဝင္တ                    | <b>0</b>                            | 0.0                    |
|         |        |                | 314237         |                                    | 9.0                   | VALLISNERIA AMER                     |                        | 144                    | 3400                                      | 370                     | 1.6                                 | <b>0</b> .4            |
|         |        | 12             | 314227         | ß                                  | <b>4</b><br>0.        | VALLISNERIA AMER<br>HETERANTHERA DUB | 90<br>00<br>00         | 1214                   | 2000                                      | 730                     | e. 0                                | <u>.</u>               |
|         |        | £              | 314215         | 8                                  | 2.0                   | HETERANTHERA DUB<br>ELODEA CANADENS  |                        | 1851                   | <del>1</del><br>8                         | 630                     | 0. <del>1</del>                     | 0.<br>0                |
|         | ,      | 7              | 314253         |                                    | 0.6                   | No Plants Present                    |                        |                        | 1 <b>8</b> 00                             | <del>-</del>            | 2.9                                 | ÷                      |
|         |        |                | 314242         | מו ו                               | ស<br>ស                |                                      | 0 <del>4</del>         | 390                    | 1700                                      | 320                     | O .S                                | o                      |
|         |        | 16             | 314232         |                                    | 2.5                   | HETERANTHERA DUB                     |                        | 8148                   | 320                                       | -                       | 0.0                                 | 0<br>0                 |
|         |        |                | 314219         |                                    | 3.0                   | ELODEA CANADENS<br>Myrio, spicatum   | ល<br>ល<br>ល            | 868<br>8               | 1000                                      | 260                     | <del>-</del><br>0                   | <del>.</del><br>0      |
|         |        |                | -              | 500003                             | 0.9                   | No Plants Present                    |                        |                        | 100                                       | 230                     | 2.4                                 | 1.7                    |
|         |        | 9              | 314249         |                                    | 2.0                   | HETERANTHERA DUB<br>VALLISNERIA AMER |                        | 74                     | 2800                                      | φ                       | o<br>w                              | o<br>0                 |
|         |        | 50             | 314259         | 314259 501008                      | 5.0                   | VALLISNERIA AMER                     | 100                    | 20                     | 840                                       | <b>78</b> 0             | 2.2                                 | 2.0                    |

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER                                   | ISLAND | GRID<br>NUMBER                          | COORD    | LORAN<br>COORDINATES | DEPTH         | MACROPHYTE<br>TAXON           |                             | PERCENT<br>COMPOSITION                   | WET<br>WEIGHT    | LIGHT (Foot Candles) | e) (se)           | CURRENT<br>(Ft./Sec. |           |
|---|--------|---|----------|----------------------|---------------|-------------------------------|-----------------------------|--|------------------|----------------------|-------------------|----------------------|-----------|
| *************************************** |        |   | Upper    | LOWer                | (Ft.)         |                               |                             |  | <u>.</u>         | Surface Bottom       | lottom            | Surface Botton       | Bottom    |
| ST. CLAIR STAG                          | STAG   | -                                       | )        |                      | 31.5          | Plants                        | resent                      |  |                  | 1200                 | 650               | 3.0                  | 2.8       |
|   |        | 2                                       |          | . 4                  | 12.0          |                               | Present                     |  | #<br>E<br>E<br>E | 830                  | 230               | 2.9                  | 2.7       |
|   |        | 0                                       |          | 497387               |               |                               | Present                     |  |                  | 2100                 | -<br>500          |                      | 2.8       |
|   |        | 4                                       | <b>i</b> | 497385               |               | No Piants P                   | Present                     |  |                  | <u>5</u>             | 8                 | 3.1                  | 2.9       |
|   |        | 6                                       |          | 497382               | 10.5          | No Plants Present             | resent                      |  |                  | 510                  | 340               | 3.2                  | 2.9       |
|   |        |   | 309044   | 497382               | 32.0          |                               |                             |  |                  | 2700                 | 1200              | 3.0                  | 2.9       |
|   |        | 7                                       |          | 497389               | 13.5          | No Plants Present             | 76887                       | 11 16 16 16 16 16 16 16 16 16 16 16 16 1 |                  | 100                  | 250               | 3.0                  | 0.0       |
|   |        | 8                                       |          |                      |               | No Plants P                   | Present                     |  |                  | 009                  | 320               | 2.7                  | 2.1       |
|   |        | 0                                       | , '' i   |                      | 14.5          | Plants                        | Present                     |  |                  | 2200                 | 1300              | 2.7                  | 2.7       |
| •                                       |        | ō                                       |          |                      | 13.5          | ente                          | Present                     |  |                  | 820                  | 280               | 2.8                  | 2.8       |
|   |        | =                                       |          |                      | 3.0           | No Plants Present             | resent                      |  |                  | 540                  | 64                | 2.0                  | 9.        |
|   |        | 12                                      |          |                      | 15.5          | No Plants Present             | ants Present                |  |                  | 2200                 | 1300              | 2.6                  | 2.6       |
|   |        | 13                                      | -        | 497403               | 7.5           | POT. NARROW                   | 2                           | \$                                       | 140              | <u>0</u>             | 220               | 2.5                  | e. –      |
|   |        | 7                                       |          |                      | 3.0           |                               | 2                           | \$                                       |                  | 2000                 | 200               | 0.0                  | 0.0       |
|   |        | -22                                     | 308058   | 497407               | 22.0          | No Plants Present             | resent                      |  |                  | 2500                 | -<br>0            | 3.0                  | 2.9       |
|   |        | 16                                      | 309053   | 497408               | 14.5          | POT. NARROW<br>POT. GRAMINEUS | NEUS                        | <b>8</b> 02                              | 110              | 2100                 | <del>2</del><br>8 | 2.3                  | 2.0       |
|   |        | 17                                      | 308042   | 497408               | 18.0          | POT. NARROW<br>ELODEA CANAD   | ARROW<br>CANADENS           | ម<br>ល                                   | င္က              | 730                  | <b>49</b> 0       | <del>-</del>         | 1.2       |
|   |        | 82                                      |          | 497409               | 2.0           | CHARA SPP.                    |                             | \$                                       | -                | 3500                 | 2700              | 0.0                  | 0.0       |
|   |        | 6                                       |          | 497413               | 23.0          | No Plants Present             | resent                      |  |                  | 2700                 | †<br>200          | 2.8                  | 2.6       |
|   |        | <b>50</b>                               |          | 309057 497413        | 12.0          |                               | HYALINA<br>RROW<br>CANADENS | 88<br>44 -                               | 208              | <b>19</b> 00         | 750               | e.                   | <b>60</b> |
|   |        | 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 309046   | 497413               | <b>4</b><br>0 | CHARA SPP.<br>ELODEA CANADENS | PP.<br>CANADENS             | ង<br>ស                                   | 50               | 099                  | 430               | 0<br>4.              | o         |
|   |        | 22                                      | 309073   | 497418               | 33.0          | No Plants Present             | resent                      |  |                  | 2700                 | 1200              | 3.8                  | 3.6       |
|   |        | 23                                      |          | 497419               | 1             | CHARA SPP.                    |                             | 8  | ស                | 2900                 | 1300              | 2.4                  | 2.3       |
|   |        | 24 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4  | 91       | 309077 497424        | 32.0          | No Plants P                   | Present                     |  |                  | 2600                 | 1400              | 3.7                  | 3.4       |

•

| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 11 12 12 12 12 12 12 12 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15 |   | Mercess | 4 4   | 2. 美国加州科科科科科科科科科科科科科科科科科科科科   |                  | *** | **** | ***    |
|---------------------------------------|---|---|---------|-------|---|------------------|-----|------|--------|
| 2                                     | 431161 010600   |   |         | 9     |   | 1800 960 2.7 1.9 | 960 | 2.7  | ص<br>- |
|                                       |   |   | ******  | 10 16 | <b>植植物有极性溶液性溶液性 经收益的 医神经球球 医阿克拉氏征 计多数 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性</b> |                  |     |      | ****   |
| <b>5</b> 6                            | 26 309084 497433 34 O No Diante Draeant                                 | C | No Plan |       | +0000   | 0000             | 5   | •    | •      |

J-31

1

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: i. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER  | ISLAND | GRID  | COORD UPPET | LORAN<br>COORDINATES<br>pper Lower | <b>ОЕРТН</b> (Ft.) | MACROPHYTE<br>TAXON          | PERCENT<br>COMPOSITION | WEIGHT (gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | T<br>ndles)<br>Sottom | CURRENT<br>(Ft./Sec.<br>Surface Bot | Sec.)       |
|--|--------|-------|-------------|------------------------------------|--------------------|------------------------------|------------------------|--------------|---|-----------------------|-------------------------------------|-------------|
| HERBSHEEFEREEFEREEFEREEFEREEFEREEFEREEFEREEF | FAWN   | ***   |             | 498246                             | 19.0               | CHARA SPP.                   | 100                    | 0            | 1700                                      | 780                   | 2.4                                 | 2.2         |
|  |        | # 7 H | 10          |                                    | 15.0               | POT NARROW                   | 100                    | 0            | 820                                       | 520                   | 2.6                                 | 2.3         |
|  |        | 9     |             | 498255                             | 0.0<br>0.0         | POT. NARROW<br>CHARA SPP.    | 90                     | 01           | 3400                                      | 1200                  | 2.2                                 | <b>8</b> .0 |
|  |        |       | • 1         | 309569 498254                      | <del>-</del><br>0. | POT. GRAMINEUS<br>CHARA SPP. | 80<br>20               | in in        | 1600                                      | 910                   | 2.8                                 | 2.3         |
|  |        | i i   | 309595      | 498264                             | 26.0               | No Plants Present            |                        |              | 2800                                      | 00                    | 2.4                                 | 2.3         |
|  |        | ဖ     | • :         |                                    | 5.0<br>0.0         | CHARA SPP.<br>Pot. Gramineus | 98                     | IS           | 3500                                      | 2400                  | <b>6</b> 0                          | 4.          |
|  |        | 7     | <b>)</b> 1  | -                                  | 7.0                | POT. NARROW                  | 100                    |              | 1400                                      | 8                     | 2.0                                 | 8           |
| ٠  |        | 80    |             |                                    | 28.0               | No Plants Present            |                        |              | 2800                                      | 1800                  | 9.0                                 | 2.4         |
|  |        | 6     |             | 4                                  | 20.0               | CHARA SPP.                   | 100                    | 7            | 3700                                      | 1600                  | 8.                                  | 1.0         |
|  |        | ō     | 309585      | 498266                             | 3.0                | CHARA SPP.                   | <del>1</del> 00        |              | 2500                                      | 2000<br>2000          | 9.                                  | 1.3         |
|  |        | • •   | 309576      | 498264                             | <b>4</b>           | CHARA SPP.                   | <b>6</b>               | -            | 1700                                      | 1200<br>200           | 2.4                                 | 9.          |
|  |        | 12    |             |                                    | 29.0               | No Plants Present            |                        |              | 3000                                      | -<br>1600             | 2.9                                 | 2.5         |
|  |        | 13    | R (         | 309598 498272                      | 0.0                | CHARA SPP.                   | <b>\$</b>              | -            | 3100                                      | 2600                  | 1.7                                 | -           |
|  |        | 4     |             | 309590 498272                      | 2.5                | CHARA SPP.<br>Pot. Gramineus | 96<br>01               | 7            | 2400                                      | 1600                  | 6.                                  | 4.0         |
|  |        |       |             |                                    | 3.0                | SPP.                         | 100                    |              | 1500                                      | <u>-</u><br>8         | 2.6                                 | 8.          |
|  |        | 16    | 309620      | 498274                             | 33.0               | No Plants Present            |                        |              | 5100                                      | 000                   | 2.8                                 | 2.2         |
|  |        | 17    | 309613      | 4                                  | 15.0               | POT. GRAMINEUS               | <b>0</b> 0             | 7            | 3900                                      | 2600                  | 4.4                                 | 0           |
|  |        |       | i '' i      | 4                                  | 9.0                | CHARA SPP.                   | <b>6</b>               | ဝင           | 3800                                      | 5<br>005              | 6.0                                 | <b>8</b> 9. |
| ·  |        | 6     |             | • 1                                | 32.0               | No Plants Present            |                        |              | 3900                                      | 1500                  | 2.8                                 | 2.2         |
|  |        | 20    |             | 309620 498286                      | 3.0                | CHARA SPP.                   | 100                    | 0            | 3900                                      | 1500                  | 0.9                                 | 0.5         |

1

ST. CLAIR RUSSELL

RIVER ISLAND

| te Grapnel Data, JUNE, | ato.                         |                                     | 1984           |                           |                           |                        | Note: 1                | Note: 1. (-) indicates missing data<br>2. (+) indicates < 0.100 g/m2 | dicates<br>dicates      | * 0. 100                                | data<br>g/m2           |
|------------------------|------------------------------|-------------------------------------|----------------|---------------------------|---------------------------|------------------------|------------------------|--|-------------------------|---|------------------------|
| 2 5                    | LORAN<br>COORDINA<br>Upper L | LORAN<br>COORDINATES<br>PPORT LOWER | DEPTH<br>(Ft.) | Ì                         | HYTE                      | PERCENT<br>COMPOSITION | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom                            | 4T<br>andles)<br>Bottom | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | ENT<br>Sec.)<br>Bottom |
| ő                      | 309954                       | 309954 498651                       | 30.0           | No Plant                  | NO Plants Present         |                        |                        | 2500   | 1200                    | 2.8                                     | 2.6                    |
| ĕ                      | 9942                         | 309942 498647                       | 27.0           | No Plant                  | No Plants Present         |                        |                        | 3200   | -<br>8                  | 2.5                                     | 2.5                    |
| Š                      | 9932                         | 309832 498642                       |                | POT. NARROW               | POT. NARROW               |                        |                        | 3200   | <del>1</del> 600        | 2.7                                     | 2.5                    |
| ğ                      | 0860                         | 309980 498658                       | • •            | No Plant                  | No Plants Present         |                        |                        |  | -<br>08-                | 3.1                                     | 2.9                    |
| ő                      | 9972                         | 309972 498658                       |                | No Plant                  | No Plants Present         |                        |                        | 3400   | 8                       |   | 2.7                    |
| ğ                      | 9954                         | 309954 498656                       | . (            | No Plant                  | No Plants Present         |                        |                        |  | <u>\$</u>               |   | t. 5                   |
| ğ                      | 3945                         | 309945 498654                       |                | POT. GR                   | POT. GRAMINEUS            |                        | ın                     |  |                         |   | 2.2                    |
| Š                      | 9933                         | 309933 498655                       | i ' i          | No Plant                  | 33.0 No Plants Present    |                        |                        |  |                         |   | 2.5                    |
| Š                      | 980                          | 309980 498661                       | . ``           | No Plant                  | 34.0 No Plants Present    |                        |                        |  | 1800                    |   | 3.4                    |
| ě                      | 9970                         | 309970 498662                       | i i            | POT. NARROW<br>CHARA SPP. | POT. NARROW<br>CHARA SPP. | 70 15<br>30            | 13                     |  | i i                     | 2.2                                     |                        |
| ő                      | 9957                         | 11 309957 498661                    | ) H            | CHARA SPP.                | 3.5 CHARA SPP.            | 1000                   | -                      | 4300   | 2400                    | 2.4                                     |                        |
| ğ                      | 9946                         | 309946 498661                       | 4<br>30        | CHARA SPP                 | 4.5 CHARA SPP.            | : :                    | S.                     | : :  | ``                      |   | ÷.                     |
| ĕ                      | 09936                        | 309936 498662                       |                | No Plant                  | No Plants Present         |                        |                        |  |                         |   | 2.2                    |
| ğ                      | 9949                         | 309949 498670                       | 35.0           | No Plant                  | No Plants Present         | 1                      |                        |  | 1800                    | 2.7                                     | 2.7                    |

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER   | ISLAND | GRID     | רם<br>נפ | LORAN         | DEPTH       | MACE                                | MACROPHYTE  | PERCENT      | WET    | LIGHT                            |               | CURRENT                      | ,<br><b>\</b> |
|---------|--------|----------|----------|---------------|-------------|-------------------------------------|---|--------------|--------|----------------------------------|---------------|------------------------------|---------------|
|         |        |          | - P ;    | pper Lover    | (Ft.)       |                                     | AXON  | COMPUSITION  | (GB.)  | (Foot Candles)<br>Surface Bottom | ottom         | (Ft./Sec.)<br>Surface Bottom | Bottom        |
| DETROIT |        | -        | • •      | 312759 498951 | ÷.          |                                     | NARROW<br>CRISPUS   | 60<br>60     | 6      | 1800 480                         | <b>7</b>      | 0.3 0.2                      | 0.2           |
|         |        | 2        | 312754   |               | 12.5        | 8<br>P                              | No Plants Present   |              |        | 4500                             | <b>48</b> 0   | 1.7                          | <b>-</b>      |
|         |        | 6        |          | 499960        | 0.          | P0T.                                |   | <b>\$</b>    | 6      | 1 100                            | 120           |                              | o.            |
|         |        | 7        |          |               | 23.0        | N<br>P                              | Plants Present  |              |        | 4500                             | 7.            |                              | 9.            |
|         |        | ß        | ,        |               | 17.5        | No Plants                           | 17.5 No Plants Present  |              |        | 3800                             | <b>18</b> 0   | 2.6                          | 1.7           |
|         |        | v        | 312763   | 498967        | 33.0        | 8<br>P                              | No Plants Present   |              |        | 4200                             | e<br>9        | 2.5                          | <b>.</b>      |
|         |        | 7        |          | . 1           |             | P0T.                                | CRISPUS   | <u>\$</u>    |        |                                  | -1400         | 0.1                          | 0.0           |
|         |        | •        | 312783   |               | 26.5        | %<br>P.                             | No Plants Present   |              |        | 3500                             | -             | 2.1                          | 6             |
|         |        | 0        |          |               |             | <b>№</b>                            | No Plants Present   |              |        | 2500                             | ŧ             |                              | -             |
|         |        | ō        |          |               | <b>8</b> .0 | P0T.                                | POT. RICHARDSONI  | <b>6</b>     | -      | 3800                             | 2 <b>9</b> 00 |                              | 0.0           |
|         |        | ÷.       |          | 499978        | 37.5        | N<br>P                              | No Plants Present   |              |        | 2600                             | 15            | 2.8                          | 2.4           |
|         |        | 12       | . 6      | 12809 499984  | -<br>0.     | CHARA                               | CHARA SPP.  | <u>5</u>     | -      | 3800                             | 230           | 1.0                          |               |
|         |        | 13       |          |               | 30.0        | Ro P.                               | No Plants Present   |              |        | 1 ± 00                           | 52            | 3.1                          | 2.3           |
|         |        | 7        |          |               | 3.5         | CHARA                               | SPP.  | <del>5</del> | 69     | 1300                             | <u>+</u>      | 0.4                          | 0.0           |
|         |        |          |          | ,             | 9.8         | CHARA<br>MYRIO.                     |   | 35.5         | 22     | 4 100                            | 2200          | 0.1                          | 0.0           |
|         |        | 9        |          | 12838 499993  | 4<br>0      | CHARA<br>MYRIG.<br>ELGOEA<br>VALLIS | CHARA SPP.<br>KMYRIG. SPICATUM<br>ELODEA CANADENS<br>VALLISNERIA AMER | 96           | 0      | 1100                             | 260           | 0.2                          |               |
|         |        | 17       |          | 312827 499990 | က<br>က      | CHARA                               | CHARA SPP.<br>Myrio. Spicatum   | 9<br>9<br>9  | S<br>S | 1200                             | 820           | 0.4                          | <u>.</u>      |
|         |        | <b>5</b> | 1        | 499999        | 12.5        | CHARA<br>POT.                       | N SPP.  | 09<br>04     | ◀      | 3500                             | 410           | <b>s</b> .0                  | 0.0           |
|         |        | 19       | . (      | 500994        | -           | No<br>P                             | No Plants Present   |              |        | 460                              | -             | 2.7                          | 2.5           |
|         |        | 50       | , ,      | 312859 500001 | 19.0        | No P.                               | No Plants Present   |              |        | 3700                             | 230           | 0.7                          | <u>-</u>      |
|         |        | 21       | . (      | 312848 500000 |             | No Pi                               | No Plants Present   |              |        | 3600                             | 280           | 1.1                          | o.            |
|         |        | 22       |          | 312840 499998 |             | No P18                              | No Plants Present   |              |        | 3500                             | 64            | <del>-</del>                 | 6.0           |
|         |        | 23       |          | 499995        |             | No P18                              | No Plants Present   |              |        | 1500                             | 38            | 9.                           |               |

24 312818 500995 35.0 No Plants Present 3000 20 3.0 2.0

J-35

| RIVER  | ISLAND                                 | GRID       | COORD  | LORAN<br>COORDINATES | DEPTH    | MACROPHYTE                                    | PERCENT<br>COMPOSITION | WEIGHT  | LIGHT<br>(Foot Cand) | Af Bridles)        | CURRENT<br>(Ft./Sec.) | ZENT<br>/Sec.) |
|--------|--|------------|--------|----------------------|----------|---|------------------------|---------|----------------------|--------------------|-----------------------|----------------|
| 110011 | ************************************** |            |        |                      |          |   |                        |         |                      |                    |                       |                |
|        | NE LANGE L'ELL                         |            |        |                      |          |   | *********              |         | 300                  | 9                  | ```                   | 9              |
|        |  | 2          | 314063 | 500667               | 6.5      | POT. NARROW                                   | 8                      | 178     | 4500                 | 000                | o.s                   | 0.1            |
|        |  | 6          | 314077 | 500676               | 34.5     | No Plants Present                             |                        |         | 3400                 | ဖ                  | 1.0                   | 0.8            |
|        |  | 4          |        |                      | 7.0      | POT. NARROW                                   | ã                      | 180     | 4300                 | 8                  | 0.3                   | 0.2            |
|        |  | W)         | 1      | •                    | 13.0     | POT. RICHARDSONI                              | \$                     | 170     | 2600                 | 330                | <b>*</b>              | <b>0</b> .0    |
|        |  | ဖ          | 316    | 500682               | 15.0     | POT. NARROW<br>NITELLA HYALINA                | <b>8</b> 0             | 28      | 3500                 | 6.10               | 9.0                   | <b>4</b> .0    |
|        |  | 7          | 314071 | 500683               | 7.0      | POT. NARROW                                   | \$                     | 150     | 3800                 | 470                | <b>7</b> .0           | 0.5            |
|        |  | 80         | 314061 | 500678               | 12.0     | No Plants Present                             |                        |         | 3500                 | 450                | 9.                    | 0.8            |
|        |  | 00         | 314084 | 500691               | 32.5     | No Plants Present                             |                        |         | 3700                 | 'n                 |                       | <del>-</del>   |
|        |  | ō          |        | 1 1                  | 7.0      | CHARA SPP.<br>POT. NARROW<br>VALLISNERIA AMER | <b>84</b> 0            | 120     | 3200                 | <del>1</del><br>0  | <del>-</del><br>0     | o.<br>0        |
|        |  | <u>.</u>   | 6      |                      | 7.0      | CHARA SPP.<br>POT. NARROW                     | 5 <b>6</b>             | 150     | 3700                 | <del>1</del><br>00 | <b>4</b> .0           |                |
|        |  | 12         |        | 500686               | 11.5     | POT. RICHARDSONI                              | \$                     | 280     | 1200                 | 6                  | 2.1                   | 1.7            |
|        |  | 13         | 314100 | 500698               | 28.0     | No Plants Present                             |                        |         | <b>4</b> 000         | 9                  | <b>0</b> .0           | 0              |
|        |  | <b>2</b>   |        |                      | 7.0      | POT. NARROW<br>CHARA SPP.                     | 00                     | 320     | 300ċ                 | <b>8</b> 20        | 0.2                   | 0.0            |
|        |  | ត្         | 314078 | 500694               | ις.      | CHARA SPP.<br>Pot. Narrow<br>Pot. Crispus     | 8<br>Ö ib iu           | 70      | 3200                 | <del>1</del> 00    | o                     | 0.3            |
|        |  | <b>9</b> - | 314069 | 500693               | <b>6</b> | POT. NARROW                                   | <u>6</u>               | 8       | 3800                 | <u>.</u><br>8      | 1.2                   | 0<br>4.        |
|        |  | 17         | 314105 | 500704               | 27.5     |   |                        |         | 4300                 | <b>52</b>          | o.6                   | 9.0            |
|        |  | e.         | 314094 | 500703               | 7.0      | CHARA SPP.<br>Pot. Narrow                     | 98<br>92               | -<br>10 | 3300                 | -<br>5<br>0        | 4.0                   | 0.2            |
|        |  | ē          | 314083 |                      | 7.0      | POT. NARROW<br>CHARA SPP.                     | ရှိ ရှိ<br>လူ          | ဇ္တ     | 3200                 | ē.<br>8            | 0.2                   | 0<br>          |
|        |  | 50         | 1 1    | 314073 500700        | 35.0     | No Plants Present                             |                        |         | 4 100                | 12                 | ط. ئ                  | -<br>0         |
|        |  | 21         | 314107 | 500709               | 27.5     | No Plants Present                             |                        |         | 4 100                | Ξ                  | <del>1</del> .0       | 9.0            |
|        |  | 22         |        | 500711               | 7.0      | CHARA SPP.                                    | 95                     | 160     | 3000                 | 730                | 0.3                   | 0.0            |

| 1         |        |               | 1           | POT. NARROW   | S.                   |   | !            |                |            |            |
|-----------|--------|---------------|-------------|---|----------------------|---|--------------|----------------|------------|------------|
| 23        | 314087 | 314067 500710 | 7.5         | POT. NARROW<br>CHARA SPP.   | 9<br>20              | 470   | 2200         | 970            | 0 · 5      | 0.0        |
| 24        | 314078 | 314078 500708 | 90.0<br>0.0 | No Plants Present   |                      |   | 3900         | 6              | 1.2        | 0.5        |
| 25        | 314111 | 500717        | 28.0        | No Plants Present   | 34<br>3              |   | 3900         | 60             | . D. L     | 0.8        |
| <b>36</b> | 314103 | 314103 500718 | 60          | NARROW<br>SPP.  | 50<br>50<br>50<br>50 | 20  | <b>59</b> 00 | 340            | O          | <u>.</u>   |
| 27        | 314091 | 314091 500716 |             | <b>i</b> i  | 100                  | 300   | 2500         | 250            | 0.2        | - 0        |
| 28        | 314083 | 314063 500716 |             | No Plants Present   |                      |   | 3800         | 0              | 2.2        | 1.6        |
| 29        | 314117 | 314117 500729 | -           | 21.0 No Plants Present  |                      | 赤髓 雅林 中心 医三角 医三角 医二角 医二角 医二角 医二角 医二角 医二角 医二角 医二角 医二角 医二 | 3500         | 380            |            | 0.3        |
| စ္ထ       | 314107 | 500728        | 27.0        |   | a) t                 |   | 3200         | 4              | 0.7        | 9.0        |
| 3.        | 314095 | 314095 500726 | 7.0         | CHARA SPP.<br>Pot. Narrow   | 70<br>30             | 420   | 4<br>8       | - 100<br>- 100 | 0.5        | 0.1        |
| 32        | 314086 | 500725        |             |   |                      |   | 3800         | 4              | o. –       | - 3<br>- 3 |
| 33        | 314112 | 314112 500734 |             |   |                      |   | 2900         | *              | 1.2        | -<br>•     |
| ĕ         | 314101 | 314101 500734 | 10.55       | POT. GRAMINEUS<br>POT. CRISPUS<br>VALLISNERIA AMER<br>POT. NARROW | ER 222               | en  | 980<br>6     | <u>&amp;</u>   | <b>+</b>   | ö          |
| 35        | , ,    | 500732        |             | No Plants Present   |                      |   | 4 100        | -              | 2.1        | 1.5        |
| 36        | 1      | 314117 500742 |             |   | 24                   |   | 2800         | 4              | ÷.3        | 9.0        |
| 37        | 314103 | 500740        | 35.5        | ş   | ant .                |   | 4500         | 60             | <b>4.6</b> | 1.5        |
| 36        | 314097 | 500738        |             | No Plants Present   | not.                 |   | 4400         | ç              | 2.4        | -<br>5     |
| 39        | 314119 |               |             | 38.0 No Plants Present  | n t                  |   | 2600         | 17             | 1.2        | 0.0        |
| \$        | 314107 | 500743        | 36.5        | 36.5 No Plants Present  | ant                  |   | 4100         | 8              | 2.3        | +:+        |
|           |        |               |             |   |                      |   |              |                |            |            |

C

| RIVER   | ISLAND           | GRID                 | רסע    | LORAN                     | DEPTH      | MACROPHYTE   | PERCENT         | WET      | LIGHT                            |           | CURRENT                      | 7              |
|---------|------------------|----------------------|--------|---------------------------|------------|--|-----------------|----------|----------------------------------|-----------|------------------------------|----------------|
|         | 1                |                      | Upper  | COURDINATES<br>pper Lower | (Ft.)      | IAXUN  | COMPOSITION     | (OB.)    | (Foot Candles)<br>Surface Bottom | Bottom    | (Ft./Sec.)<br>Surface Bottom | ec.)<br>Bottom |
| DETROIT | DETROIT STONEY 1 | -                    |        | 501975                    | 0.0<br>0.0 | POT. NARROW<br>Myrio. Exalbesc                     | 90<br>01        | 60       | 2700                             |           | 1.2 1.1                      |                |
|         |                  | 2                    | 6      |                           | 0.0        | POT. NARROW<br>VALLISNERIA AMER                    | 90<br>90        | 4        | 2400                             | S.        |                              | 0.             |
|         |                  | m                    | 314208 | 501974                    | 0          | POT. NARROW<br>POT. CRISPUS<br>VALLISMERIA AMER    |                 | 8        | 0                                | ę         | 0.1                          | 9.0            |
|         |                  | •                    |        | 314199 501972             | 10.0<br>0  |  | 2 2 2 2         | ţ<br>Į   | 2700                             | 6<br>9    | 6.7                          | 0.2            |
|         |                  | <b>s</b> n           |        | 314188 501972             | o.         | POT. NARROW<br>MYRIO. SPICATUM                     | 0.<br>0.<br>0.  | <b>6</b> | 640                              | \$        | 0.1                          | 0.0            |
|         |                  | 9                    | 314235 | 501980                    | 1.0        | No Plants Present                                  |                 |          | 4400                             | 10        |                              | 0.0            |
|         |                  | 7                    | 314222 | 501981                    | 0.8        | . 1  | 8               | 940      | 4300                             | 17        | ·<br>•                       | 0.7            |
|         |                  | •                    | 314212 | 501980                    | 0.         | No Plants Present                                  |                 |          | 2300                             | 260       | 7.                           | 0.             |
|         |                  | G                    | 314201 | 501978                    | 13.0       | POT. CRISPUS<br>MYRIO. SPICATUM<br>POT. NARROW     | 9 60<br>0 80 80 | 6        | 2600                             |           | 0.9                          | 0.5            |
|         |                  | 9                    |        | 501980                    | 5.0        | POT. CRISPUS                                       | <del>5</del>    | -        | 94                               | ð         | 9.0                          | •<br>•         |
|         |                  | -                    |        | 314238 501985             | 8          | No Plants Present                                  |                 |          | 820                              | <b>38</b> | 1.2                          | 0.0            |
|         |                  | 22                   |        | 314226 501988             | 0.         | POT. CRISPUS<br>MYRIO. SPICATUM<br>ELODEA CANADENS | 88<br>4 -       | 922      | 2000                             | 380       | o.3                          | o.<br>o        |
|         |                  | £3                   |        |                           | 4<br>0     | POT. CRISPUS<br>ELODEA CANADENS                    | <b>8</b> 0      | 3696     | 3800                             | e<br>e    | 0.0                          | 0.0            |
|         |                  | 7                    |        | 501996                    | 11.5       | No Plants Present                                  |                 |          | 2600                             | 29        | 2.4                          | 0.7            |
|         |                  | 5                    | •      | 314242 501992             | 7.5        | No Plants Present                                  |                 |          | 630                              | 65        | 2.1                          | -              |
|         |                  |                      | 314232 | 501995                    | 3.0        | POT. CRISPUS                                       | 100             | 3698     | 480                              | 10        | o. 4                         | 0.0            |
|         |                  | 7                    | 314217 | 501940                    | 3.5        | ELODEA CANADENS<br>POT. CRISPUS                    | ស<br>ទ          | 2712     | 4100                             | 1500      | 0.5                          | 0.0            |
|         |                  | # 65<br># 18<br># 18 | 314256 | 50 1000                   | 0.8        | No Plants Present                                  |                 |          | 2600                             | 240       | 2.2                          | 2.0            |
|         |                  | 19                   | 314250 | 314250 501005             | 2.5        | VALLISNERIA AMER                                   | <b>00</b> )     |          | 4200                             | 2800      | 8,                           | .3             |

314260 501010 6.0 HETERANTHERA DUB

J - 39

| ST CLAIR STAG 1 3080<br>3 3080<br>4 3080<br>11 3080<br>14 3080<br>15 3080<br>16 3090<br>17 3090<br>18 3090<br>18 3090 | Upper Lower<br>308032 497377 | ( 43)                             |  | (            | · W          | Surface Bottom |             |             | Bottom      |
|---|------------------------------|-----------------------------------|--|--------------|--------------|----------------|-------------|-------------|-------------|
|   | 309032                       | (11.)                             |  |              |              |                |             |             |             |
|   | 2000                         | 31.0 No Plants                    |  |              |              | 760            |             | 3.0         | <b>5</b> .8 |
|   |                              |                                   | essessessessessessesses                            |              |              | 3300           | 000<br>000  | 3.1         | 2.9         |
|   | 309040                       |                                   | Janta Present                                      |              |              | 550            | 8           | 3.0         | 2.9         |
|   | 309032                       |                                   | No Plants Present                                  |              |              | 750            | 230         | 2.7         | 2.2         |
|   | . 6                          | 12.0 No Plant                     | Plants Present                                     |              |              | 3500           | <u>•</u>    | 2.9         | 2.6         |
|   | 308045 4                     |                                   | s Present  |              |              | #<br>=<br>=    | 7.9         | 2.8         | 2.9         |
|   | 308035 4                     |                                   | to Present   |              |              |                | <u>0</u>    | 9.0         | 2.3         |
|   | 309024                       |                                   |  |              |              | 3400           | 2000        | 2.8         | 2.0         |
|   | 309050 4                     | 32.0 No Plants                    | Present  |              |              | 200            | 8           | 3.0         | 3.0         |
|   | 309038                       | •                                 | No Plants Present                                  |              |              | 640            | 260         | 2.7         | 5.0         |
|   | 309027                       | •                                 | *  |              |              | 000            | <b>8</b> 40 | #<br>#<br># | G           |
|   | 309052 497401                | 18.5 CHARA S                      |  | 8            | -            | 80             | 60          |             | 2.7         |
|   | 309040 497402                | 6.0 POT. GRAM<br>CHARA SPP        | INEUS  | 60<br>40     | 90           | 089            | 520         | 4.          | 0<br>.0     |
|   | 309034 497404                | 4.0 POT. GR<br>ZANN. P<br>CHARA S | GRAMINEUS<br>PALUSTRIS<br>SPP.                     | <b>8</b> 55  | ğ            | 640            | 000         | 0.1         | 0.1         |
|   | 309059                       |                                   | No Plants Present                                  |              |              | 440            | 8           | 3.3         | 2.8         |
|   | 309053 497407                | 17.5 No Plant                     | No Plants Present                                  |              |              | 730            | <b>6</b>    | 2.8         | 2.1         |
|   |                              | 5 POT.<br>POT.<br>NITEL           | POT. NARROW<br>POT. RICHARDSONI<br>NITELLA HYALINA | ស 4<br>O ស ស | 128          | 1000           | 170<br>170  | <b>8</b> 0. | o. 3        |
|   | 309038 497407                | 3.0 POT. RI<br>CHARA S<br>POT. ZO | RICHARDSONI<br>SPP.<br>ZOSTERIFORM                 | න<br>ව<br>හ  | ō            | 650            | 540         | 0.1         | 0.7         |
|   | 309063 4                     |                                   | No Plants Present                                  |              |              | 380            | <b>8</b>    | 2.8         | 2.1         |
| . 经实现价值的现在分词分词  | 309056 497412                | 10.0 POT. RI<br>CHARA S           | RICHARDSONI<br>SPP.                                | 66           | ō<br>-       | 380            | 220         | e           | 0.7         |
|   | 309045 497413                |                                   | SPP.<br>GRAMINEUS<br>SNERIA AMER                   |              | <del>1</del> | 00 <b>9</b>    | 2009        | 9.0         | <b>.</b>    |

|   | 0.0  | 9.0                                     | 0.0                             | ₩.  |
|---|--|---|---------------------------------|---|
|   | 1.5  | 3.7                                     | 1.5                             | 3.6   |
|   | 130  | - 40                                    | 370                             | 8   |
|   | 420  | 650 140 3.7 3.0                         | 430                             | 440 100 3.8 3.5   |
|   | 118 420 130 1.5 0.9                                      |   | -                               |   |
|   | 90<br>10   |   | 100 1 430 370 1.5 0.9           | 计机能线 经收益 医甲状腺 医甲状腺 医甲状腺素 医甲状腺原皮皮脂皮皮皮皮脂皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮皮 |
| 22 309074 497417 32.5 No Plants Present | 23 309065 497416 12.5 POT, NARROW 90 118 420 130 1.5 0.9 | 24 309076 497424 32.0 No Plants Present | 25 309070 497427 4.0 CHARA SPP. | 26 309085 497432 31.5 No Plants Present   |
| 32.5 No                                 | 2.5  | 32.0 NO                                 | 4.0                             | 31.5 No   |
| 97417                                   | 197416   | 97424                                   | 197427                          | 197432  |
| 309074 4                                | 309065 4   | 309078 4                                | 309070                          | 309085  |
| 22                                      | 23   | 24                                      | 25                              | 26  |

J-41

· Francisco

| RIVER          | ISLAND | GRID           | 100    | LORAN         | DEPTH        | MACROPHYTE                    | PERCENT  | WET                             | LIGHT                            |                | CURRENT         | 5             |
|----------------|--------|----------------|--------|---------------|--------------|-------------------------------|--|---------------------------------|----------------------------------|----------------|-----------------|---------------|
|                |        |                | Upper  | COORDINATES   | (Ft.)        | TAXON                         | COMPOSITION  | (9)                             | (Foot Candles)<br>Surface Bottom | dies)<br>ottom | (Ft./S          | Sec.)         |
| ST. CLAIR FAWN | FAIN   | •              | 309569 | 498245        | 22.0         | CHARA SPP.                    | 100  | 2                               | 4700                             | 750            | •               | 9             |
|                |        | 2              | 309564 | 4             | <b>18</b> .0 | POT. MARROW<br>POT. GRAMINEUS | 0<br>10<br>10<br>10  | 9                               | 400                              | 300            | 2.5             | 2.0           |
|                |        |                | 309578 |               | 19.0         | CHARA SPP.                    | 00   | 2 1<br>2 1<br>2 1<br>2 1<br>2 1 |                                  | 670            | 2.4             | <b>.</b>      |
|                |        | # <b>4</b>     | 3082   | 498           | 0.0<br>0.0   |                               | 90<br>10   | 8                               | : -                              | 720            | 2.2             | 0.            |
|                |        | 6              |        |               | 21.0         | No Plants Present             | # if d q t is in the last of t |                                 | 2000                             | 420            | 0.7             | 0.3           |
|                |        | ø              |        | . 4           | 7.0          | POT. GRAMINEUS<br>CHARA SPP.  |  | 160                             | 3700                             | -1<br>8        | 7.7             | -             |
|                |        |                | 309570 | 498258        | 0.<br>8      | POT. GRAMINEUS<br>CHARA SPP.  | 00 7   | 102                             | 4500                             | 920            | 20.0            | ю<br>О        |
|                |        | 80             |        | •             | 25.0         | No Plants Present             |  |                                 |                                  | 8              | 2.2             | 7.            |
|                |        |                |        |               | 25.0         | ا د ا                         | \$   | 2                               |                                  | 2 <b>8</b> 0   | 3.0             | 7.7           |
|                |        | 9              | •      |               | 0.           | CHARA SPP.                    | 8  | *                               |                                  | 2800           | 1.7             | 3             |
|                |        | -              |        |               | S.O          | CHARA SPP.                    | Š  | 50                              | 900 <u>5</u>                     | 570            | 1.7             | -<br>-        |
|                |        | 12             | 309612 | 498271        | 26.0         | No Plants Present             |  |                                 |                                  | 210            | 3.1             | 2.6           |
|                |        | <del>1</del> 3 |        |               | 3.0          | POT. GRAMINEUS<br>CHARA SPP.  | တ္တန္တ   | 32                              |                                  | 2500           | 4.2             | <b>a</b><br>0 |
|                |        | 7-             | 309590 | 309590 498270 | 9.0<br>0.0   | POT. GRAMINEUS<br>CHARA SPP.  | 00   | <b>Q</b>                        |                                  | <u>.</u>       | <b>o</b> .o     | o             |
|                |        | 5              |        |               | <b>4</b> .0  | CHARA SPP.                    | <b>6</b>   | 60                              |                                  | 088            | ÷<br>.6         | 1.2           |
|                |        | 16             |        |               | 29.5         | No Plants Present             |  |                                 |                                  | 150            | 3.5             | 2.9           |
|                |        |                | 309611 | 498276        | 0.0 <u>.</u> | 20                            | 7.4<br>7.4<br>6  | 26                              | 3500                             | <u>\$</u>      | o.<br>-         | <b>o</b>      |
|                |        | 60             |        | 498277        | 9.0<br>0.0   | CHARA SPP.<br>Pot. Gramineus  | 80<br>20   | 20                              | 2500                             | 200<br>200     | <b>8</b> 0<br>• | 0.7           |
|                |        | 6              | 309626 |               | 29.0         | No Plants Present             |  |                                 | 2000                             | 1.1            | 3.6             | 5.9           |
|                |        | 50             | 309619 | 309619 498285 | 0.<br>0.     | POT. GRAMINEUS<br>CHARA SPP.  | 80<br>50   | 130                             | 1200                             | 00             | <b>9</b> .0     | in.<br>O      |

Submersed Macrophyte Graphel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER             | ISLAND              | GR 10<br>NUMBER | _ | ZAN<br>INATES<br>LOWER | <b>DEPTH (Ft.)</b> | <b>=</b>                                    | PERCENT<br>COMPOSITION | WET<br>WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | T<br>ndles)<br>Bottom | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | Sec.)<br>Bottom |
|-------------------|---------------------|-----------------|---|------------------------|--------------------|---|------------------------|------------------------|---|-----------------------|---|-----------------|
| ST. CLAIR RUSSELL | ST. CLAIR RUSSELL 1 |                 |   | 309951 498650          | 30.5               | No Plants Present                           |                        |                        | 3500                                      |                       | 2.7                                     |                 |
|                   |                     |                 |   | 308939 498650 15.0     | 15.0               | POT. NARROW<br>POT. GRAMINEUS<br>CHARA SPP. | 97                     | 140                    |   | 8                     | <b>2</b> . 6                            | -               |
|                   |                     | 6               |   | 309928 498649 30.0     | 0.06<br>0.0        | 309928 498649 30.0 No Plants Present        |                        |                        | 3500                                      | 320                   | 2.5                                     | 2.0             |
|                   |                     | *               |   | 309974 498653          | 39.0               | No Plants Present                           |                        |                        | 3300                                      | -<br>-<br>-           | 3.3                                     | 2.8             |
|                   |                     | 10              |   | 498659                 | 32.0               | 309967 498659 32.0 No Plants Present        |                        |                        | 3400                                      | 120                   | 9. F                                    | 2.9             |
|                   |                     | 9               |   | 498655 11.0            | -<br>-<br>-        | 309954 498655 11.0 POT. NARROW              |                        |                        | 000<br>4                                  | 006<br>6              | 2.6                                     | <del>-</del>    |
|                   |                     | 7               |   | 309943 498655          | 0.                 | POT. GRAMINEUS<br>CHARA SPP.                | 9.4<br>9.              | 230                    | 4300                                      | 1800                  | <br>B                                   | <b>e</b>        |
|                   |                     |                 |   | 309931 498657          | 35.0               | No Plants Present                           |                        |                        | 3500                                      | 320                   | 2.3                                     | 6.              |
| ,                 |                     | 6               |   | 309977 498664 27.0     | 27.0               | No Plants Present                           |                        |                        | 3000                                      | ÷                     | . O                                     | 1.2             |
| •                 |                     | 9               |   | 309969 498666          | 4<br>D             | POT. GRAMINEUS<br>CHARA SPP.                | 75<br>25               | 60<br>60               | 3800                                      | 2000<br>2000          | 1.2                                     | ۍ.<br>نو        |
|                   |                     | -               | - | 498662                 | 0.                 | CHARA SPP.<br>POT. GRAMINEUS                | 70<br>30               | 4                      | 4 100                                     | 2500                  | <del>1</del> .3                         | 0.7             |
|                   |                     | 12              | - | 309949 498664          | 9. S               | CHARA SPP.                                  |                        | 2                      | 4200                                      | 2300                  | 9                                       | 4.              |
|                   |                     | 13              |   | 309937 498662          | 36.0               | No Plants Present                           |                        |                        | 17  | 320                   | 2.8                                     | 2.2             |
|                   |                     | 7               | • | 309952 498670          | 7.0                | CHARA SPP.                                  | <u>\$</u>              | æ                      | 4300                                      | 1500                  | 1.7                                     | 0.              |

| RIVER   | ISLAND | GRID           | LOI    | LORAN         | DEPTH          | MACROPHYTE  | PERCENT<br>COMPOSITION                                | WET<br>WFIGHT | LIGHT (Foot Candles) |                   | CURRENT  | -<br>5 2     |
|---------|--------|----------------|--------|---------------|----------------|---|---|---------------|----------------------|-------------------|----------|--------------|
|         |        |                |        | Upper Lower   | (Ft.)          |   |   | ( <b>.</b>    | Surface Bottom       | ottom             | Surface  | Bottom       |
| DETROIT | BELLE  | -              | ! !    | 312760 449952 | -<br>0.        | VALLISNERIA AMER  | <del>о</del>  | ç             | 3600                 | 8                 |          | 0.3          |
|         |        | 7              | , (    | 312753 499950 | 12.0           | No Plants Present   |   |               |                      | 290               |          | 1.2          |
|         |        | m              | •      | 499959        |                |   | 25<br>25<br>10<br>10                                  | 4             | 9100<br>0016         | 1600              | <b>•</b> | 0.2          |
|         |        | 4              | 312757 |               | 26.5           | No Plants Present   |   |               | 3300                 | 16                | 2.5      | <b>4</b>     |
|         |        | ı,             | , ,    | 312773 499968 |                | No Plants Present   |   |               | 3400                 | 5                 | 2.8      | 5.0          |
|         |        | ø              | 312759 |               |                | No Plants Present   |   |               | 3400                 | 00                | 2.6      | 2.6          |
|         |        | 7              | •      |               | 7.8            | VALLISNERIA AMER<br>POT. NARROW<br>POT. CRISPUS                                       | 60<br>25<br>15  | င္က           | 2500                 | <del>.</del><br>8 | 0.1      | <del>-</del> |
|         |        | 60             |        |               | 18.0           | No Plants Present   |   |               | 2800                 | <b>58</b>         | 2.3      | 5.           |
|         |        | 6              | 312775 | 499973        | 33.5           | No Plants Present   | 有 排放性 机物管 化加油 医甲状腺 医甲状腺 医甲状腺 医甲状腺 医甲状腺 医甲状腺 医甲状腺 医甲状腺 |               | 3200                 | 27                | 9.0      | 2.7          |
|         |        | ō              |        | 312796 499978 | in<br>in       | POT. RICHARDSONI<br>POT. NARROW<br>CHARA SPP.<br>VALLISNERIA AMER<br>POT. ZOSTERIFORM | 0 6 4 m +   | <del>.</del>  | 2800                 | 4                 | <b>4</b> | 0.2          |
|         |        | -              | , ,    | 499970        | 35.0           | No Plants Present   |   |               | 3300                 | <b>38</b>         | 2.9      | 2.7          |
|         |        | <u>ā</u>       | 312807 | 499985        | o.             | POT. RICHARDSONI<br>VALLISNERIA AMER<br>MYRIO. SPICATUM<br>POT. ZOSTERIFORM           | 0<br>8 6 4 4  | 2<br>2<br>3   | 4600                 | 380               | ب<br>ب   | <b>▼</b>     |
|         |        | 13             | 312795 | 499980        | 34.5           | No Plants Present   |   |               | 3300                 | 37                | 3.0      | 2.8          |
|         |        | <del>-</del>   | 3128   |               | <b>4</b><br>0. | CHARA SPP.<br>VALLISNERIA AMER<br>NAJAS FLEXILIS                                      | ස<br>ර<br>ව   | 89            | 4400                 | 2600              | 0<br>1   | -            |
|         |        | <del>1</del> 5 | 3128   | 499994        | ສາ<br>ຕ        | CHARA SPP. MYRIO. SPICATUM VALLISNERIA AMER NAJAS FLEXILIS                            | 80 T E E E E E E E E E E E E E E E E E E              | 500<br>200    | 4200                 | 2000              |          | · o<br>o     |
|         |        | £6             | 312838 | 499993        | 4<br>0         | CHARA SPP<br>NITELLOP: OBTUSA<br>VALLISNERIA AMER<br>NAJAS FLEXILIS                   | 20.00   | 372           | 4600                 | 1600              | e.<br>0  | 0.2          |

|  | 0.2   | <br><br>  | 2.4                                     | #<br>                                   | 0                  | 1.2   | 2.1                                    | 2.7               |
|--|---|---|---|---|--------------------|---|--|-------------------|
|  | 0.2   | 9.<br>O   | 3.1                                     | 4.3                                     | -                  | 4   | 2.1 2.1 2.1                            | e                 |
|  | 2800  | 230   | 13                                      | 14                                      | 20                 | 17  |  | 32                |
|  | 4300  | * 2300 230 0.6 0.5  | 3500 13 3.1 2.4                         | 4 100                                   | 4600 1.1 1.0       | 4200  | 3500                                   | 3500              |
|  | 154 4300 2800 0.2 0.2   |   | #<br>#<br>#<br>#<br>#                   |   |                    |   | TE   1   1   1   1   1   1   1   1   1 |                   |
| 000  | M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M | 55<br>50<br>6<br>6<br>7<br>7  | #<br># :                                |   |                    |   |  |                   |
| POT. NARROW<br>MYRIO. SPICATUM<br>POT. GRAMINEUS | 17 312828 499991 4.6 CHARA SPP.<br>NITELLOP. OBTUSA<br>NAJAS FLEXILIS<br>VALLISNERIA AMER   | 18 312817 499988 7.5 CHARA SPP. POT. NARROW CHARA SPP. POT. RICHARDSONI POT. ZOSTERIFORM NAJAS FLEXILIS | 19 312809 499992 32.0 No Plants Present | 20 312860 499000 20.5 No Plants Present | No Plants Present  | 22 312840 499998 22.5 No Plants Present 4200 17 1.7 1.2 | 23 312829 49994 27.5 No Plants Present | No Plants Present |
|  | 9.  | r.  | 32.0                                    | 20.5                                    | 19.5               | 22.5  | 27.5                                   | 0.46              |
|  | 499991  | 00<br>00<br>00<br>8   | 499992                                  | 499000                                  | 499000             | 499998  | 499994                                 | 499994            |
|  | 312828 499991   | 312817 499988   | 312809 499992                           | 312860 499000 20.5                      | 312851 499000 19.5 | 312840 499998   | 312829 499984                          | 312818 499994     |
|  | 47  | <b>\$</b>   | 19                                      | <b>3</b> 0                              | 21                 | 22  | 23                                     | 24                |

Submersed Macrophyte Graphel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER   | ISLAND                           | GRID<br>NUMBER | LO<br>COORO<br>Upper | LORAN<br>COORDINATES<br>PPOR LOWER | DEPTH<br>(Ft.) | MACROPHYTE<br>TAXON  | PERCENT<br>COMPOSITION                  | VET<br>VEIGHT<br>(gm.)                  | LIGHT<br>(Foot Candles)<br>Surface Bottom | dies)       | CURRENT<br>(Ft./Sec.<br>Surface Bot | ENT<br>Sec.)<br>Bottom |
|---------|----------------------------------|----------------|----------------------|------------------------------------|----------------|--|---|---|---|-------------|-------------------------------------|------------------------|
| DETROIT | DETROIT HENNEPIN 1 314073 500665 |                | 314073               | 3 500665                           |                | No Plants Present  |   |   | 700                                       | -           | 1.4                                 |                        |
|         |                                  | 2              |                      |                                    |                | **************************************                           | 80<br>20                                | 2625                                    | 1300                                      | 360         | 0.2                                 | 0.1                    |
|         |                                  | 0              | 314075               | 500671                             | 34.5           | No Plants Present  |   | #                                       | 780                                       |             | 1.2                                 | 0.8                    |
|         |                                  | ₹              | _                    | 1                                  | <b>4</b><br>0. | POT. NARROW<br>VALLISNERIA AMER<br>POT. CRISPUS                  | 75<br>20<br>5                           | 3380                                    | 1300                                      | 5           | 0.3                                 |                        |
|         |                                  | i.             | 14057                | 500671                             | 13.0           | VALLISNERIA AMER   |   | 900                                     | :   | 18          | 1.2                                 | 1.1                    |
|         |                                  |                | 314079               | 500679                             |                | No Plants Present  |   | 1 E E E E E E E E E E E E E E E E E E E | 006                                       | 4           | 0.6                                 | 0.3                    |
|         |                                  |                | 14070                | 500680                             | : ;            | POT. NARROW<br>VALLISNERIA AMER                                  | 90 00                                   | 2800                                    | 1500                                      | 80          | 0.3                                 | 0                      |
|         |                                  |                | 314060               | , Mo                               | 12.0           | VALLI SNERIA AMER  |   | 8                                       | 008                                       | 42          | 2.0                                 | 1.7                    |
|         |                                  |                | 14093                |                                    |                | No Plants Present  |   |   | -<br>-<br>-<br>-                          |             | 0.7                                 | 0.3                    |
|         |                                  | 9              | 14083                | _ #                                |                | VALLISNERIA AMER   | 8                                       | <del>0</del>                            | 1800                                      | 220         | 0.5                                 | 0.1                    |
|         |                                  |                | 14075                |                                    | 4.<br>RD       | POT. NARROW<br>CHARA SPP.<br>Vallismeria amer<br>Elodéa canadens | 4 4<br>B B B C -                        | 2540                                    | 1700                                      | 150         | e.<br>0                             | Ö                      |
|         |                                  | 12             | 314064               | 500684                             | o. <b>e</b>    | POT. RICHARDSONI<br>VALLISNERIA AMER<br>POT. ZOSTERIFORM         | 65<br>34                                |   | . 000                                     | 120         | 0:-                                 | 0.2                    |
|         |                                  | 13 3           | · 🗝 #                |                                    | 32.0           | No Plants Present  |   |   |   | 6           | 1.3                                 | 0.0                    |
|         | •                                | 14 3           |                      |                                    | 5.1            | VALLISNERIA AMER   | -<br>00-                                | 130                                     | 1900                                      | 360         | 0.3                                 | 0.0                    |
|         |                                  | 15 3           |                      |                                    | 0.4            | CHARA SPP.<br>Vallisneria amer                                   | <b>0</b> 00                             | 490                                     | 1200                                      | <b>5</b> 80 | 0.2                                 | 0.2                    |
|         |                                  |                | 314068               | , MC                               | o.             |  | 9 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 408                                     | 470                                       | 120         | 0.2                                 | •                      |
|         |                                  | 17 3           | 314101               | 500700                             | 30.5           | No Plants Present  |   |   | 1000                                      | 7           | 1.3                                 |                        |
|         |                                  |                | 314091               |                                    | : :            | VALLISNERIA AMER<br>Myrio. Spicatum                              | 90<br>21:31                             | 75                                      | 1900                                      | 3.0         | 0.5                                 | 0.2                    |
|         |                                  | 61             | 314081               | 500697                             | 4<br>R         |  | 06<br>30                                | 138                                     | 1300                                      | 05          | 0.3                                 | 6.0                    |

|            |               |               |                |  |               |                  |             |        |            | 1        |
|------------|---------------|---------------|----------------|--|---------------|------------------|-------------|--------|------------|----------|
| 20         | 314071        | 500700        | 8.0            | No Plants Present  |               |                  |             | 1      | 0.3        | <u>-</u> |
| 21         | 314105        | 314105 500710 | 30.0           |  |               |                  | #<br>#<br># |        | 1.4        | - :      |
| 22         | 314095        | 314095 500706 | 7.1            | CHARA SPP.<br>POT. RICHARDSONI<br>VALLISNERIA AMER                         | 70<br>25<br>5 | 0<br>0<br>6<br>8 | 2400        | 220    | 0.3        | -<br>0   |
| 23         | 314086        | 314086 500708 | 9.             | VALLISNERIA AMER<br>CHARA SPP.<br>MYRIO. SPICATUM                          |               | 676              | *           | 260    | 0.3        | 0.2      |
| 24         | 314080        | 314080 500709 | 7.8            | POT. RICHARDSONI<br>VALLISNERIA AMER<br>NAJAS FLEXILIS<br>POT. ZOSTERIFORM | 36            | 0                | 460         | 120    | o. o       | - · ·    |
| 25         | 314108        | 314108 500716 | 29.5           | No Pients Present  |               |                  |             | 9      |            | 7.0      |
| 26         | 314099 500712 | 314099 500712 |                |  |               |                  | #<br>#<br># | #<br># |            |          |
| 27         | 314089        | 314069 500714 | <b>4</b> .7    | AMER<br>ATUM<br>LIS  | 24 00 m       | 250              | 100         | 170    | 0          | -        |
| 28         | 314080 500712 | 314080 500712 | 31.5           | No Plants Present  |               |                  | 570         | •      |            | -        |
| 29         | 314112 500722 | 314112 500722 | 26.5           | No Plants Present  |               |                  | 2200        |        |            | 0.0      |
| 8          | 314103 50072  | 314103 500721 | . <del>.</del> | AMER   |               |                  | 2400        | 99     | 4.0        | 0.5      |
| 30         | 314093 500719 | 5007 19       | 8.4            | AMER   | 8             | <del>-</del>     |             |        |            | 0.5      |
| 32         | 314082        | 314082 500719 | 34.5           |  |               |                  | 8.<br>8.    |        |            | 8.       |
| 33         | 314106 500727 | 314106 500727 | 21.0           |  |               |                  |             |        |            | 0        |
| <b>3</b> 6 | 314097        | 500727        | κυ<br>         | π<br>π   |               |                  | 1400        | 120    | 0.2<br>2.2 | 0.0      |
| 35         | 314085 500722 |               | 32.0           | No Plants Present  |               |                  | 460         | g      | 2.5        | 2.3      |
| 36         | 314111        |               | 31.0           |  |               |                  |             |        |            | 0.5      |
| 37         | 314102        | 314102 500734 | 9. 4           | SONI   |               |                  |             |        |            | 0.5      |
| 33         | 314089 500733 |               |                |  |               |                  |             | 5 2.6  |            | 2.2      |
| 39         | 314114 50074  |               |                | No Plants Present  |               |                  | 1600        | 6      |            | 9.0      |
| 9          | 314105        |               | 33.0           | No Plants Present  |               |                  | 350         |        | 2.1        | 6.1      |

Submersed Macrophyte Graphel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER   | ISLAND | GR ID<br>NUMBER | COORDINATES   | MATES         | DEPTH          | MACROPHYTE<br>TAXON  | PERCENT<br>COMPOSITION   | WET<br>WEIGHT   | (Foot Candles) | T<br>ndles)       |                 | int<br>iec.)    |
|---------|--------|-----------------|---------------|---------------|----------------|--|--|---|----------------|-------------------|-----------------|-----------------|
|         |        |                 | naper Lower   |               | ( ) 4 ( )      | 计多数 化苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基苯基  |  | ( <b>8</b>  | SULTACE BOLLOR | Bottom<br>seesses | Seriace         | Bottom          |
| DETROIT | STONEY | -               |               | 501976        | 9.0            | VALLISNERIA AMER   | 100  | 110   | 2800           | 260               | 1.6             | 0.5             |
|         |        | 7               |               | 501976        | 5.<br>O        | POT. NARROW<br>VALLISNERIA AMER  | 0.<br>0.   | 430   | 2300           | 210               | 0.7             | 0.2             |
|         |        | 0               | 314209        | ##D           | o.             | ISNERIA<br>NARROW<br>ZOSTERI   | 50<br>35<br>5  | 061   |                | 730               | 9.<br>0         | 0.3             |
|         |        | •               |               | 501974        | ÷<br>0.1       | VALLISNERIA AMER   |  | 188   |                | 630               | 9.0             |                 |
|         |        |                 |               | 314286 501973 | o.<br><b>6</b> | POT. RICHARDSONI<br>VALLISNERIA AMER   |  | 430   |                | 470               | ю.<br>О         | o. <del>-</del> |
|         |        |                 | 314235        | 501983        | <b>7</b>       |  | 100  | s   | 2900           | <u>.</u>          | 2.3             | 0               |
|         |        | _               | 314221        | ı BÖ          | 7.5            | POT. NARROW<br>VALLISNERIA AMER  | 00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00 | 930   | 2800           | 250               | o.<br>-         | 0.2             |
|         |        |                 | 314212        | 200980        | Ξ              | No Plants Present  |  | );<br>;;<br>;;<br>;;<br>;;<br>;;<br>;;<br>;;<br>;;<br>;;<br>;;<br>;;<br>;;<br>; | 2200           | 250               | 1.2             | 1.2             |
|         |        | ٥               | 314200        | 200880        |                | No Plants Present  |  |   |                | 1900              | 0.1             | 0.0             |
|         |        | 9               | 314191        | 500979        |                | No Plants Present  |  |   | 3000           | 9                 | 0.5             | 0.1             |
|         |        | =               | 314           | 501989        | 8.<br>6        |  | 80<br>20<br>20   | 12  | 3000           | <b>9</b>          | o. <del>-</del> | 0.5             |
|         |        | 2               | 314228        | 501989        | 9.0            | ELODEA CANADENS<br>VALLISMERIA AMER<br>MYRIO. SPICATUM<br>HETERANTHERA DUB<br>POT. CRISPUS | <b>58</b> 86   | <b>2</b>  | 2000           | 0<br>0            |                 | o.<br>0         |
|         |        | <del>.</del>    | . (           | 501987        | 3.0<br>9.0     | ELODEA CANADENS<br>VALLISNERIA AMER  | 88<br>-  | 1920  | 2500           | <u>-</u><br>8     | o.o             | o.<br>0         |
|         |        | <b>7</b>        | 314254        | 501996        | 10.5           | No Plants Present  |  |   | 2700           | <b>560</b>        | 2.4             | 1.6             |
|         |        | ā.              | 314243        | 501997        | φ              | VALLISNERIA AMER<br>POT. NARROW<br>POT. CRISPUS<br>BUTOMUS UMBELLAT                        | 4 6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                    | 8   | 000g           | 700<br>0          | io.             | 0.7             |
|         |        |                 | 314233        | 501996        | 3.0            | HETERANTHERA DUB   | 8  | <b>5</b>  | 3000           | 200<br>200        | 0.1             | o<br>.o         |
|         |        | 11              | 314222        | 501995        | 2.5            | ) <b>'Z</b> ' (  | 30 0<br>30 0<br>30 0   | 1120  | 2700           | 1600              | 0               | o. <del>1</del> |
|         |        | 19              | 314258 501004 | 50 1004       | 7.0            | No Plants Present  |  |   | 2200           | 710               | 1.7             | 0.9             |

J-49

| ISLAND         | GR 10<br>NUMBER | LORAN<br>COORDINATES<br>Upper Lowe | AN<br>NATES<br>LOWER | DEPTH<br>(Ft.) | MAC                                     | MACROPHYTE<br>Taxon   | PERCENT<br>COMPOSITION   | WET<br>WEIGHT<br>(gm.)     | LIGHT<br>(Foot Candles)<br>Surface Bot.om | _           | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | ra<br>betom |
|----------------|-----------------|------------------------------------|----------------------|----------------|---|---|--|----------------------------|---|-------------|---|-------------|
| ST. CLAIR STAG |                 |                                    |                      |                | ¥                                       | = ==  |  |                            | 3500                                      | 009         | 3.0                                     | 2.5         |
|                | 2               |                                    |                      | 15.5           | <b>7</b>                                |   | # # # # # # # # # # # # # # # # # # #  |                            | 2000                                      | 350         | 2.9                                     | 2.4         |
|                | 6               | . ``                               | 497381               | 35.5           | 8<br>8                                  | OS S No Plants Present  |  |                            | 3000                                      | 320         | 2.7                                     | 2.4         |
| ,              | •               | ) i                                |                      |                | CHARA                                   |   |  | -                          | 4300                                      | <u>.</u>    | 2.7                                     | 2.4         |
|                | 6               |                                    |                      |                | No P1                                   | No Plants Present   |  |                            | <b>m</b> 1                                |             | 3.0                                     | 2.3         |
|                | 9               | • ••                               |                      |                | No P                                    | No Plants Present   | R<br>K<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H |                            | B   | 520         | 2.8                                     | 2.3         |
|                | 7               |                                    |                      |                |   | ants Present  | 技术的 机存储物 计动物 医粘体   |                            | 4500                                      | 100         | 2.5                                     | 1.6         |
|                |                 |                                    |                      |                | No Plants                               | ants Present  | · · · · · · · · · · · · · · · · · · ·  |                            | ä   | 1300        | 2.3                                     | 2.0         |
|                | 0               | •                                  |                      |                | 76 P.                                   | ants  | 有有 的复数 化二甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲基苯甲  |                            | 3600                                      | 280         | 2.4                                     | 2.3         |
| •              | ō               |                                    |                      |                |   | P.  |  |                            | 3700                                      | 1200        | 2.2                                     | 1.7         |
|                |                 | ,                                  |                      | 3.5            | =                                       |   | 和 計畫 化 计   | T<br>A<br>B<br>B<br>B<br>B | 000                                       | 3500        | 9.4                                     | 5           |
|                | 12              | 309049                             | 497399               | 2.4.8          | No P                                    | No Plants Present   | 6 H H H H H H H H H H H H H H H H H H H  |                            | 3000                                      | 290         | 2.1                                     | <b>7</b> .6 |
|                |                 | 309038                             | 497398               | o. o           | POT. R. POT. GF POT. CF CHARA SELODEA   | RICHARDSONI<br>GRAMINEUS<br>NARROW<br>A SPP.                          | ង្គង<br>សសស 4  | 1830                       | <b>4</b> 000                              | 2500        | o.<br>10                                | 0.3         |
|                | +               | 308033                             | 497401               | 9.0            |   | A SPP.<br>GRANINEUS   | 80<br>20   | <u>\$</u>                  | 430ò                                      | 3500        | 1.4                                     | o.<br>-     |
|                | 15              | i '' i                             | 497406               | 31.0           | 76<br>P                                 | No Plants Present   |  |                            | 00<br>5                                   | 47          | 2.6                                     | 9.          |
|                | 16              |                                    | 497407               | 19.0           | 5<br>P                                  | No Plants Present   |  |                            | 3200                                      | 580         | 2.6                                     | 4.          |
|                | 17              | 309043                             | 497407               | %<br>0.0       | NITELL/<br>POT. N/<br>POT. R/<br>ELODEA | NITELLA HYALINA<br>POT. NARROW<br>POT. RICHARDSONI<br>ELODEA CANADENS | 2 33 33<br>25 55 55  | 360                        | 4000                                      | 0<br>0<br>0 | o.                                      | 0.5         |
|                | 18              | . (                                | 497406               | о<br>О         | CHARA                                   | CHARA SPP.  | <b>6</b>   | 50                         | 4000                                      | 3200        | 4.0                                     | 7.0         |
|                | 19              | 309065                             |                      | 24.0           | No P                                    | No Plants Present   |  |                            | 230                                       | <b>6</b> 0  | 2.2                                     | 1.7         |
|                | 20              | 309057                             | 497411               | 12.0           | P01.<br>61.00<br>P01.                   | POT. NARROW<br>ELGOEA CANADENS<br>POT. RICHARDSONI                    | 2.20<br>12.10<br>10.10   | 620                        | 4000                                      | 470         | <del>-</del>                            | o. 1        |
|                | 21              | 309046                             | 497412               | 3.5            | 707<br>. TO                             | POT. GRAMINEUS<br>POT. RICHARDSONI                                    | 55<br>20   | 54                         | <b>4</b> 000                              | 000g        | <b>6</b> .0                             | <b>69</b>   |

CHARA SPP. 20 NAJAS FLEXILIS 5

| <b>建設的保护</b> |  |        |     | *** | *****   |         | <b>计算机 化邻苯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基</b>      |   | *****                |                |     | **** |
|--------------|--|--------|-----|-----|---------|---------|---|---|----------------------|----------------|-----|------|
| 22           | 22 309074 497418 31.0 No Plants Present  | 497418 | 31. | 0   | to Plan | its Pre | sent  |   | 410                  | 410 40 3.0 2.5 | 9.0 | 2.5  |
| 23           | 23 309068 497419 16.0 CHARA SPP.   | 497419 | 16. |     | CHARA   | SPP.    | 23 309068 497419 16.0 CHARA SPP. 100 100 2500 600 2.0 1.2 | 9 | 10 2500 600 2.0 1.2  | 009            | 2.0 | 1.2  |
| 24           | 24 309076 497423 29.0 No Plants Present  | 497423 | 29. |     | to Plan | ts Pre  | 24 308076 497423 29.0 No Plants Present 370 40 3.0 2.7    |   | 370                  | 370 40 3.0 2.7 | 3.0 | 2.7  |
| 25           | 25 309070 497423 3.0 CHARA SPP.  | 497423 | 6   |     | CHARA   | SPP.    | 25 308070 497423 3.0 CHARA SPP. 100 100 3000 2300 1.7 1.3 | 9 | 10 3000 2300 1.7 1.3 | 2300           | 1.7 | 1.3  |
|              | TERRESTREES OF THE STATE OF THE |        |     |     |         |         |   |   |                      |                |     |      |

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

ST. CLAIR FAWN

RIVER ISLAND

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| GRID           | LOI<br>COORD | LORAN<br>COGRUINATES<br>PPOR LOWER | (Ft.)         | MACROPHYTE<br>TAXON                                | PERCENT<br>COMPOSITION   | WEIGHT<br>(gm.) | LIGHT<br>(Foot Candles)<br>Surface Bottom | T<br>ndles)<br>Bottom | CURRENT<br>(Ft./Sec.)<br>Surface Bottom | ENT<br>Sec. )<br>Bottom |
|----------------|--------------|------------------------------------|---------------|--|--|-----------------|---|-----------------------|---|-------------------------|
|                | 309578       | 309578 498245                      | 23.0          | No Plants Present                                  |  |                 | 3500 58                                   | 86                    |   | 1.2                     |
| a              | 309564       | 308564 498243                      |               |  | ညီ <del>ဂို</del> ဗာ ဗာ  | 9               | 0001                                      | 06-                   | 2.9                                     | <b>.</b>                |
| ၈              | 309579       | 498247                             | 20.0          | CHARA SPP.   | <del>,</del>   | -               | 1800                                      | 5                     | 2.8                                     | 2.3                     |
| 4              | 309567       | 498251                             | 15.0          | POT. NARROW<br>CHARA SPP.                          | 80<br>20   | 0,              | i<br>H                                    | 120                   | 2.4                                     | <b>0</b> .4             |
| n              | 309591       |                                    | 24.0          | CHARA SPP.   | 100  |                 | . (                                       |                       | 9                                       | 2.4                     |
| ဖ              | 309583       |                                    |               |  | 88   | 1080            |   | 8                     | , –                                     | -<br>-<br>-             |
| 7              | 309571       | 309571 488256                      | O.            | POT. RICHARDSONI<br>POT. GRAMINEUS                 | 70<br>30   | 8               | 4500                                      | <u>\$</u>             |   | o.3                     |
| 60             | 309606       |                                    |               | No Plants Present                                  |  |                 | 3300                                      | 53                    | 2.3                                     | 1.6                     |
| Ø              | 309595       | 309595 498262                      | 0.0           | POT. RICHARDSONI<br>ELODEA CANADENS<br>POT. NARROW | <b>80</b>  | 2490            | 00<br>8                                   | 230                   | 0.7                                     | 0<br>-                  |
| ō              | 309587       |                                    | <b>4</b><br>0 | CHARA SPP.   | <u>\$</u>  | 9               | 700<br>007                                | 9                     | 1.2                                     | 0.7                     |
| =              | 309575       | 309575 498265                      | o.            |  | 00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00 | <b>Q</b>        | Ÿ   | -<br>6                | <del>-</del><br>0.                      | <b>o</b>                |
| 12             | 309611       | 309611 498269                      | , ,           | No Plants Present                                  |  |                 | 2500                                      | 60                    | 3.2                                     | 2.7                     |
| <del>1</del> 3 | 309600       | 309600 498270                      |               | CHARA SPP.<br>POT. GRAMINEUS                       | S IS   | <b>Q</b>        | 4500                                      | 1500                  | e. <del>-</del>                         | <b>9</b> .0             |
| 4              | 309589       | 309589 498269                      | 9.0<br>0.0    | CHARA SPP.<br>Pot. Narrow                          | 98   | 20              | 4500                                      | 3300                  | 0.7                                     | o<br>o                  |
| 15             | 309579       | 309579 498269                      | 0.4           | CHARA SPP.   | <u>6</u>   | 25              | 3900                                      | 2200                  | 1.2                                     | <u>.</u>                |
| 16             | 309619       | 309619 498275                      | 28.0          | No Plants Present                                  |  |                 | 3300                                      | -<br>5                | 2.9                                     | 2.2                     |
| 1.1            | 309612       | 498273                             |               | POT. GRAMINEUS<br>POT. NARROW<br>POT. ZOSTERIFORM  | 80   | 38C             |   | 450<br>0              | <b>4</b> .0                             | 0.2                     |
| 69             | 309607 4982  | 309607 498275                      | 3.0           |  | 80<br>20   | 12              | 4800                                      | 2600                  | •<br>•                                  | o.3                     |
| 6)             | 309626       | 309626 498284                      | 29.0          | No Plants Present                                  |  |                 | 3500                                      |                       | 3.2                                     | 3.0                     |

1

(

9.0 0.7 440 850 640 222 POT. RICHARDSONI CHARA SPP. POT. GRAMINEUS POT. NARROW 3.0 309619 498282 20

J-53

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| ISLAND            | IND GRID<br>NUMBER                    |               | NATES  | DEPTH       | MACROPHYTE<br>TAXON                         | PERCENT<br>COMPOSITION                  | WET<br>WEIGHT                             | (Foot Candles) |                 | CURRENT<br>(Ft./Sec.) |
|-------------------|---------------------------------------|---------------|--------|-------------|---|---|---|----------------|-----------------|-----------------------|
|                   |                                       |               |        | ( ' )   )   |   |   | (8)                                       | SUPPOS BOLLOS  |                 |                       |
| ST. CLAIR RUSSELL |                                       | •••           | 498649 | 32.5        | No Plants Present                           | i                                       |   |                |                 |                       |
|                   | 2                                     |               | 498647 | 24.0        | No Plants Present                           | 动物的 拉邦顿拉奥顿镇和美丽                          | ii<br>M<br>M<br>M<br>M<br>M<br>M<br>M     | 1800           | 1 2.7           | 9.0                   |
|                   |                                       | <u> </u>      | 498648 | 25.5        | No Plants Present                           | 物性 机石矿铁 计存储器 计存储器                       | 0<br>0<br>0<br>0<br>0<br>0                | 3700           | 1. 2.6          |                       |
|                   | #<br>#<br># 4<br>#<br>#               |               | 498656 | 39.0        | No Plants Present                           |   |   | #<br>#<br>#    | 8<br>8<br>8     |                       |
|                   |                                       |               | 498653 | 34.5        | No Plants Present                           |   | E<br>0<br>1<br>0<br>0<br>1<br>1<br>1<br>1 |                |                 |                       |
|                   | . O                                   |               | 498655 | 1.5         |   | 100                                     | 646                                       |                | 4.4             | ;<br>0<br>0           |
|                   | · · · · · · · · · · · · · · · · · · · | 309945        | 498653 | 0<br>0      | POT. GRAMINEUS<br>POT. NARROW<br>CHARA SPP. |   |   | 4700           | 120 0.8         | j                     |
|                   |                                       |               | 498654 | 31.0        | No Plants Present                           |   |   |                |                 | #<br>#<br>#           |
|                   | 0                                     |               | 498662 | 31.0        | No Plants Present                           | # # * * * * * * * * * * * * * * * * * * |   | 1500           |                 |                       |
|                   | 0                                     | -             |        | <b>6</b> .0 |   | 70<br>30                                | 186                                       |                | 730 0.5         | #<br>#<br>P           |
|                   |                                       |               |        | Ð. 4        | POT. GRAMINEUS<br>CHARA SPP.                | 50<br>50<br>50                          | ç   | 3400           |                 |                       |
|                   | 12                                    |               | 498664 | 9. O        | POT. GRAMINEUS<br>CHARA SPP.                | 90<br>80<br>80                          | ç   | 3700 8         | <b>6</b> 20 0.9 |                       |
|                   | 13                                    | 309934        | 498661 | 38.5        | No Plants Present                           |   |   | 1500           | 2 2.5           | 2.5                   |
| ٠                 | 4                                     | 309949 498671 | 498671 | 15.5        | No Plants Present                           |   |   | 3600           | 2.2             | 7                     |

1

| DETROIT BELLE | NUMBER   | ⊃ :    | COORDINATES<br>pper Lower | ( )            | TAXON  | COMPOSITION                            | WEIGHT   | (Foot Candles)   | ndles) | (Ft./Sec.       | ()     |
|---------------|----------|--------|---------------------------|----------------|--|--|----------|------------------|--------|-----------------|--------|
|               | -        |        |                           |                |  |  | <u> </u> | SUFFERING BOTTOM |        | Surface         | Botton |
|               |          | 312760 | 312760 499950             | <b>4</b> .0    | VALLISNERIA AMER   | 400                                    | 258      |                  | 250    | 1.2 0.9         | 6.0    |
|               | 2        | 312753 | 312753 499952             | 1.5            | No Plants Present  |  |          |                  |        | 4.8             | 9.     |
|               | <b>6</b> |        | 312768 499954             | o.             | VALLISNERIA AMER<br>NAJAS FLEXILIS<br>POT. ZOSTERIFORM<br>POT. CRISPUS<br>CHARA SPP.                         | g<br>6                                 | 132      | 4 30             |        | 4.0             |        |
|               | 4        |        | 12757 499959              | 24.0           | No Plants Present  |  |          | 270              | 7      | 3.1             | 2.9    |
|               | •        | וחו    | 312772 499967             | 15.5           | No Plants Present  | •                                      |          | 430              | . 6    | 3.0             | 2.7    |
|               | 9        | 312762 |                           | 35.0           | No Plants Present  |  |          | 8                |        | 3.2             | 2.8    |
|               | 7        | 312780 |                           | <b>9</b><br>0. | VALLISNERIA AMER<br>CHARA SPP.   | 8                                      |          | <b>6</b>         | . ~    | 0.3             | 0.     |
|               |          | 312782 | 4 :                       | 19.0           | No Plants Present  |  |          |                  |        | 2.5             | D.     |
|               | 6        | 312776 |                           | 32.5           | No Plants Present  |  |          | 460              | #<br>E | 3.0             | 2.8    |
|               | ō.       | 312796 | 499978                    | o.<br>60       | VALLISNERIA AMER<br>CHARA SPP.<br>POT. NARROW<br>POT. RICHARDSONI  | <b>3</b> 555                           |          | 000              | 98     | 9.0             | ю<br>О |
|               | -        | 312785 | 312785 499975             | 33.5           | No Plants Present  |  |          | . (              |        | 3.2             | 0.0    |
|               | 12       | 312809 | 489985                    | -<br>0.<br>0.  | VALLISNERIA AMER   |  | 32       |                  | 47     | 1.5             | 0.     |
|               | 13       |        |                           | 35.5           | No Plants Present  |  |          | 1600             | 4-     | 3.3             | 3.0    |
|               |          | . (5)  | 499894                    | 9.0<br>0       | CHARA SPP. VALLISNERIA AMER NAJAS FLEXILIS MYRIO. SPICATUM NITELLOP. OBTUSA                                  | 60<br>20<br>10<br>70<br>60<br>70<br>70 | 2 18     | 3900             | 2300   | <b>o</b> .      | o<br>T |
|               | ř.       | 2 2 2  | 499990<br>499990          |                | CHARA SPP. NAJAS FLEXILIS MYRIO. SPICATUM NITELLOP. OBTUSA NITELLA HYALINA VALLISNERIA AMER POT. ZOSTERIFORM | 2001<br>24461                          | 8<br>8   | 3000             | 8      | <b>9</b> .<br>O | 0.3    |
|               | 9        | 312838 | 499992<br>499992<br>1     |                | CHARA SPP. NAJAS FLEXILIS VALLISNERIA AMER MYRIO. SPICATUM   | ###################################### | 080      | 210              | - 9    | 0.2             | 0.2    |

|          |                       |                    |               | NITELLOP. OBTUSA 2<br>ELODEA CANADENS 2   |  |                    |    |                  |     |
|----------|-----------------------|--------------------|---------------|---|--|--------------------|----|------------------|-----|
| 11       | 312828                | 312828 499990      | <b>6</b><br>0 | 8 B B B B B B B B B B B B B B B B B B B   | # 4 4 10 10 10 10 10 10 10 10 10 10 10 10 10 | 1700               | 00 | 0.2              |     |
| <b>~</b> | 18 312818 499988 13.5 | 312818 499988      |               | NAJAS FLEXILIS CHARA SPP. 35 VALLISNERIA AMER 10 POT. ZOSTERIFORM 5 POT. RICHARDSONI 3 NITELLOP. OBTUSA 2 |  | 58 3000 17 1.1 1.0 |    | #<br>#<br>#<br># | 0.  |
| 19       | 312810                | 312810 499993 34.5 | 34.5          | 19 312810 499993 34.5 No Plants Present   |  | 1300               | 9  | 3.0              | 2.6 |
| 20       | 312860                | 312860 499999 21.0 | 21.0          | 20 312860 499999 21.0 No Plants Present   |  |                    |    | 120 1.0          | 9.0 |
| 21       | 312850                | 499998             | 18.0          | 312850 499988 18.0 No Plants Present  |  | 1600               | 8  | 20 0.6           | 0.3 |
| 22       | 312840                | 499995             | 21.0          | 22 312840 499995 21.0 No Plants Present   |  | 2100               |    | o. –             | 7.4 |
| 23       | 312828                | 499993             | 25.0          | 23 312828 499993 25.0 No Plants Present   |  | 3200               | -  |                  | 0.4 |
| 24       | 312817                | 499989             | 33.0          | 312817 499989 33.0 No Piants Present  |  |                    |    | 2 2.7 1.6        | 7.6 |

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data 2. (+) indicates < 0.100 g/m2

| RIVER   | ISLAND   | GRID       | ם פ    | LORAN         | DEPTH           | MACROPHYTE                           | PERCENT   | WET                                   | LIGHT            | 4        | CURRENT         | <u> </u>       |
|---------|----------|------------|--------|---------------|-----------------|--------------------------------------|---|---------------------------------------|------------------|----------|-----------------|----------------|
|         |          |            | Upper  | Lower         | (Ft.)           |                                      | COMPOSITION                                       | ( <b>GB</b> . )                       | Surface Bottom   |          |                 | ac.)<br>3ottom |
| DETROIT | HENNEPIN | i '        | , ,    |               | 33.5            | No Plants Present                    |   |                                       | 1100             |          | 1.3             | 8.0            |
|         |          | 6          | 314064 | 1 L7          | 7.0             |                                      | #<br>#<br>#<br>#<br>#                             | 470                                   | 290 7            | 76       | 0.3             | o.<br>-        |
|         |          |            |        |               | 36.0            |                                      |   | # # # # # # # # # # # # # # # # # # # | #<br>#<br>#<br># | 6        | 1.5             | 6.0            |
|         |          |            | 314067 |               | 6.5             | <b>a</b> 1                           |   | 352                                   | #<br>#<br>#<br># | 97       | 0.2             | <u>-</u>       |
|         |          | In         |        | 500675        | 12.0            | ISNERIA                              |   | 20                                    |                  | =        | 7               | 0.0            |
|         |          | 9          |        | •             | 21.0            | No Plants Present                    |   |                                       |                  |          | 0.7             | 0.4            |
|         |          |            | 314071 | 500681        | 7.0             | VALLISNERIA AMER                     |   | 160                                   |                  |          | 0.4             | 0.             |
|         |          | : :        |        | 500682        |                 | VALLISMERIA AMER                     |   | 2                                     |                  |          | 2.0             | 7.             |
|         |          | o,         |        | 500691        | 32.5            | No Plants Present                    |   |                                       |                  | 7        | ۰.5<br>د        | 8.0            |
|         |          | 2          | 314085 | •             | 6.0             | ISNERIA                              |   | 260                                   |                  | 15       | 4.0             | <u>-</u> .     |
|         |          | =          |        | -             | 6.5             | VALLISNERIA AMER                     |   | 370                                   |                  | -        | 0.5             | 0.4            |
|         |          | 12         | 3 -    |               | 0.0             | VALLISNERIA                          |   | 9                                     | #<br>#<br>#      | 120      | 0               | 0.7            |
|         |          | 13         | 314099 | 200696        | 27.0            | No Plants Present                    |   |                                       |                  | 6        | 1.6             | 0.7            |
|         |          | 7          |        | 500695        | 16.             | VALLISNERIA AMER                     |   | 250                                   |                  | 8        | 0.2             | o<br>          |
|         |          | î.         | 314077 |               | <b>9</b><br>0.0 |                                      |   | 134                                   | 370 16           | 160      | o<br>ع          | 0.5            |
|         |          | 16         | 314071 | 500696        | <b>0</b>        | VALLISNERIA AMER                     |   | 125                                   | 420              | -        | 4.4             | 0.2            |
|         |          | 17         |        |               | 29.5            | No Plante Present                    |   |                                       | 086              | 2        | <del>1</del> .3 | 0.3            |
|         |          |            | 314091 | 500705        | <b>.</b><br>0.  | VALLISNERIA AMER<br>Chara SPP.       | 70<br>00<br>30                                    | 200<br>200                            |                  | <u>5</u> | e. 0            | o<br>-         |
|         |          |            | 314081 | 500702        | 0<br>9          | VALLISNERIA AMER<br>CHARA SPP.       |   | 188                                   | 380 17           | 170      | 0.3             | 0.0            |
|         |          | 20         | 314075 | 314075 500705 | 7.0             | POT. RICHARDSONI<br>VALLISNERIA AMER |   | 115                                   | 490 13           | 90       | 9.<br>O         | -<br>0         |
|         |          | : :        | 314107 | 314107 500708 | 30.0            |                                      |   |                                       | 850              | 4        | 1.3             | 0.5            |
|         |          | 22         |        | 314094 500709 | <b>6</b> .0     | VALLISNERIA AMER                     | 001   | 580                                   |                  | 22       | 0.3             | -<br>0         |
|         |          | 23         |        | 500707        | <b>6</b> .0     | VALLISNERIA AMER<br>Myrio. Spicatum  |   | 160                                   |                  |          | O.3             | -<br>0         |
|         |          | . 有有自由领 有有 |        |               |                 | " 三 企 法 经 经 经 经 经 经 经 经 经 经 经 经 经 经  | 化化物 经现代的 化二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 |                                       |                  |          |                 |                |

| 24 | 314079 | 314079 500707 | <b>6</b> 0 | POT. RICHARDSONI<br>VALLISNERIA AMER<br>NAJAS FLEXILIS | 60<br>235<br>155 | 538           | 240              | <u>-</u> |            | <b>8</b> .0 |
|----|--------|---------------|------------|--|------------------|---------------|------------------|----------|------------|-------------|
| 25 | 314109 | ğ             | 28.5       | No Plants Present                                      |                  |               | 260              | 2        | . J        | <b>7</b> .0 |
| 36 | 314097 | 500715        | 0.0        | VALLISNERIA AMER<br>CHARA SPP.                         | 90<br>10         | <b>e</b><br>0 | 580              | 170      | 0.1        | 0.0         |
| 27 | 314089 | 314089 500716 | 6.0        | VALLISNERIA AMER                                       | <u></u>          | 172           | 360              | -6       | 0.2        | 0.1         |
| 28 | 314081 | 314081 500714 | 34.0       | 8834   |                  |               | 210              | -        |            | 1.6         |
| 29 | 314112 | 314112 500718 | 26.0       | sent   |                  |               | 600              | 9        |            | 0.5         |
| 8  |        | 314101 500720 | 7.0        |  | ,<br>00          | 92            | 700              | 180      |            | 0           |
|    |        | 314092 500719 | 6.0        |  | 100 400          | <b>0</b>      | 300              | 9        |            | 0.4         |
| 32 |        | 314083 500723 | 32.0       | Ž  |                  |               | 230              | -        |            | 1.6         |
| 33 | 314105 | 314105 500728 | 10.0       | VALLISNERIA AMER<br>CHARA SPP.                         | 99 110           | 110           | <del>1</del> 000 | 130      |            | 0.1         |
| 35 |        | 314096 500729 | 0.6        | 314096 500729 9.0 VALLISMERIA AMER                     | 100              | 130           | 360              | 7        | 4          | 0.5         |
| 35 |        | 314087 500728 | 31.5       |  |                  |               | 240 1            | -        |            |             |
| 36 |        | 500734        | 0.0        |  | <u>§</u>         | 200           | 1100             | 130      | 0.2        |             |
| 37 |        | 314101 500736 | 32.0       | No Plants Present                                      |                  |               | 430              | 7        | <b>6</b> . | -           |
| 38 | 314098 | 314098 500737 | 30.0       | No Plants Present                                      |                  |               | 730              | 1 2.5    | 2.5        | 1.7         |
| 96 | 314114 | 314114 500743 |            | 12.5 No Plants Present                                 |                  |               | <u>8</u>         | 9        |            | O<br>.0     |
| 9  | 314106 | 314106 500746 |            | No Plants Present                                      |                  |               | 9                | 2        | 2.1        | 1.5         |

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data 2. (\*) indicates < 0.100 g/m2

| RIVER   | ISLAND | GRID | LORAN         | AN           | DEPTH   | MACROPHYTE   | PERCENT  | WET                                     | LIGHT                            | ;              | CURRENT | Ę               |
|---------|--------|------|---------------|--------------|---------|--|--|---|----------------------------------|----------------|---------|-----------------|
|         |        |      | <b>⊃</b> ;    | LOWER        | (F.t.)  | NOVA -   | COMPUSITION  | (gm.)                                   | (Foot Candles)<br>Surface Bottom | dies)<br>ottom | ~ • i   | Sec.)<br>Bottom |
| DETROIT | STONEY | -    | 314228        | 501972       | ۍ<br>ن  | VALLISNERIA AMER   | 100  | 236                                     | 4300                             | 340            |         | 0.3             |
|         |        | 2    | 314217        | 501971       | 11.0    | •  |  |   | 4100                             | 320            | 2.2     | 1.2             |
|         |        | 6    | 314207        | 501972       | 8.<br>O | VALLISNERIA AMER   |  | 670                                     | 4000                             | 150            | 0.8     | 0.7             |
|         |        | 4    | 314197        | 14197 501971 | 9.0     |  |  | 92                                      | 4100                             | 250            | 0.5     | 0.3             |
|         |        | ស    |               | 501971       | 9.5     | ISNERIA  |  | 670                                     | 4 100                            | 130            | 0.4     | 0.7             |
|         |        | 9    | 314233        | 501980       | 13.0    | No Plants Present  | 超级 计多数 医乳球               |   | 3500                             | 150            | 2.3     | 9               |
|         |        |      | 314221        | 501980       | 7.5     | POT. NARROW<br>VALLISNERIA AMER  | - 4<br>H<br>H<br>S<br>H                                      | 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + | 4000                             | 8              | 0.5     | 0.0             |
|         |        |      | 314212        | 501978       | 0.0     | VALLISNERIA AMER   | 100  | 4 18                                    | 3800                             | 8              | 1.6     |                 |
|         |        | 6    | 314200        | 501978       | 9.5     | No Plants Present  |  |   | 3500                             | 780            | 0.4     | 0.3             |
|         |        |      | 314191        | 501978       | 0.0     | No Plants Present  |  |   | 4400                             | <b>\$</b>      | 0.4     | 0.7             |
|         |        | -    | 314237        | 501986       | 0.6     |  | 00   | 28                                      | 4200                             | 610            | 1.2     | 0.3             |
|         |        | 2    | 314225        | 50 1982 N    | 4<br>0. | HETERANTHERA DUB<br>ELODEA CANADENS<br>MYRIO. SPICATUM<br>VALLISNERIA AMER | 0.00<br>0.00<br>1.00<br>1.00<br>1.00<br>1.00<br>1.00<br>1.00 | 3024                                    | 4000                             | 2500           | 0       | 0.0             |
|         |        |      | 314216        | 501985       | ີ<br>ເຄ | HETERANTHERA DUB<br>ELODEA CANADENS<br>POT. CRISPUS                        |  | 351                                     | 4000                             | 2000           | 0.3     | 0.0             |
|         |        | 14   | 314250        | 501992       | 0.0     | No Plants Present  |  |   | 3200                             | 450            | 2.7     | 9.              |
|         |        | 15   | 314240        | 501994       | 0.9     | VALLISNERIA AMER   | 001  | 48                                      | 3900                             | <b>006</b>     | 4.4     | 4.0             |
|         |        | N    | 314230        | 501995       | 3.0     | HETERANTHERA DUB   |  | 3080                                    | 3400                             | 200            | 0.2     | 0.5             |
|         |        | 17   | 314220        | 501993       | 3.5     | ELODEA CANADENS<br>HETERANTHERA DUB  | 60<br>40   | 620                                     | 3800                             | 1800           | 0.1     | 0.0             |
|         |        |      | 314254        | 502001       | 7.0     | No Plants Present  |  |   | 3500                             | <u>0</u>       | 2.3     |                 |
|         |        | 6    | 314246        | 502001       | 2.0     | VALLISNERIA AMER   | †<br>00  | 09                                      | 3900                             | 3500           | 0.7     | 0.6             |
|         |        | 20   | 314260 502010 | 502010       | 5.0     | HETERANTHERA DUB   |  | S                                       | 4200                             | 1500           | 2.3     | 1.6             |

## APPENDIX K

Submersed Macrophyte Grapnel Data - A Summary

Composition and frequency of occurrence (six dates) of submersed plants, biomass of plants per haul, and physical data from measurements associated with the sampling grid at the six islands or shoals. Potamogeton spp. are the narrow-leaf forms of the genus.

Appendix K
Table 1. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stag Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

| Grid         | Taxon<br>composition   | Mean plant weight | Mean<br>depth | Mean light<br>transmission | Mean curren<br>(ft. | /s)    |
|--------------|--|-------------------|---------------|----------------------------|---------------------|--------|
| intersection | (frequency)  | (g/30 ft. haul)   | (ft.)         | (x)                        | Surface             | Bottom |
| 1            | No plants  | 0                 | 25            | 44                         | 3.0                 | 2.7    |
| 2            | No plants  | 0                 | 14            | 56                         | 2.8                 | 2.3    |
| 3            | No plants  | 0                 | 34            | 41                         | 2.7                 | 2.5    |
| 4            | No plants  | 0                 | 14            | 52                         | 2.8                 | 2.6    |
| 5            | No plants  | 0                 | 11            | 62                         | 2.8                 | 2.4    |
| 6            | No plants  | 0                 | 30            | 43                         | 2.8                 | 2.6    |
| •7           | No plants  | 0                 | 13            | 54                         | 2.4                 | 2.0    |
| 8            | No plants  | 0                 | 6             | 63                         | 2.6                 | 2.2    |
| 9            | No plants  | 0                 | 27            | 37                         |                     |        |
| 10           | No plants  | 0                 | 12            | 50                         | 2.2                 | 1.9    |
| 11           | Chara (1)  | Tr                | 3             | 86                         | 1.6                 | 1.5    |
| 12           | Chara (1)  | Tr                | 18            | 45                         | 2.3                 | 2.1    |
| 13           | Chara (4) ETodea (3) P. gramineus (3) Potamogeton spp. (3) Myriophyllum (1) Nitella (1) P. richardsonii (1)                | 1117              | 8             | 62                         | 1.2                 | 0.7    |
| 14           | Chara (3) P. gramineus (3) Elodea (1) Nitella (1) P. crispus (1) P. richardsonii (1) Potamogeton spp. (1) Zannichellia (1) | 668               | 3             | 73                         | 0.6                 | 0.4    |
| .5           | No plants  | 0                 | 26            | 41                         | 2.7                 | 2.4    |
| 6            | Potamogeton spp. (2) Chara (1) NiteTia (1) P. gramineus (1)  | 20                | 17            | 42                         | 2.4                 | 2.2    |
| 7            | P. richardsonii (4) Potamogeton spp. (4) Elodea (3) Myriophyllum (2) Nitella (2)   | 730               | 16            | 24                         | 0.9                 | 0.4    |
| 8            | Chara (5) P. crispus (1) P. richardsonii (1) Potamogeton spp. (1) P. zosteriformis (1)                                     | 74                | 3             | 82                         | 0.4                 | 0.3    |
| 9            | Chara (1) Potamogeton spp. (1)   | 1                 | 23            | 41                         | 2.4                 | 2.0    |

Appendix K
Table 1. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stag Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

| Grid         | Taxon<br>composition  | Mean plant weight | Mean<br>depth | Mean light transmission | (ft     | nt velocity<br>./s) |
|--------------|---|-------------------|---------------|-------------------------|---------|---------------------|
| intersection | (frequency)   | (g/30 ft. haul)   | (ft.)         | (\$)                    | Surface | Bottom              |
| 20           | P. richardsonii (4) Chara (3) ETodea (3) Potamogeton spp. (2) Witella (1) P. crispus (1) P. gramineus (1) Vallisneria (1) | 201               | 13            | 42                      | 1.1     | 0.6                 |
| 21           | Chara (6) Elodea (3) P. gramineus (3) P. richardsonii (3) Myrlophyllum (1) Majas (1) Potamogeton Vallisneria (1)          | 106               | •             | 70                      | 0.6     | 0.5                 |
| 22           | No plants   | 0                 | 32            | 36                      | 3.1     | 2.8                 |
| 23           | Chara (3) Potamogeton spp. (3) P. gramineus (2)   | 44                | 12            | 42                      | 1.6     | 1.1                 |
| 24           | No plants   | 0                 | 32            | 41                      | 3.4     | 3.0                 |
| 25           | Chara (4) P. gramineus (1)  | 16                | 4             | 68                      | 1.7     | 1.2                 |
|              | No plants   | 0                 | 33            | 50                      | 3.4     | 3,2                 |

Appendix K
Table 2. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Fawn Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

| Grid         | Taxon<br>composition   | Mean plant weight | Mean<br>depth | Mean light<br>transmission | (ft.    | t velocity<br>./s) |
|--------------|--|-------------------|---------------|----------------------------|---------|--------------------|
| intersection | (frequency)  | (g/30 ft. haul)   | (ft.)         | (%)                        | Surface | Bottom             |
| 1            | Chara (2)<br>P. gramineus (1)  | 29                | 18            | 18                         | 2.3     | 1.6                |
| 2            | Potamogeton spp. (5) Chara (3) P. gramineus (2) P. richardsonii (2) Elodea (1) | 71                | 16            | 35                         | 2.1     | 1.4                |
| 3            | Chara (5) Potamogeton spp. (2) Elodea (1)                                      | 33                | 16            | 24                         | 2.3     | 1.6                |
| 4            | Potamogeton spp. (4) Chara (3) P. gramineus (2)                                | 116               | 12            | 42                         | 2.0     | 1.1                |
| 5            | Chara (2)  | 1                 | 26            | 22                         | 2.0     | 1.6                |
| 6            | Chara (5) P. gramineus (4) P. richardsonii (2) Elodea (1) Potamogeton spp. (1) | 1123              | 10            | 31                         | 0.9     | 0.7                |
| 7            | P. gramineus (5)<br>Chara (4)<br>Potamogeton spp. (1)<br>P. richardsonii (1)   | 288               | 9             | 39                         | 1.7     | 0.8                |
| 8            | No plants  | 0                 | 28            | 29                         | 2.3     | 1.7                |
| 9            | Chara (3) Elodea (1) Potamogeton spp. (1) P. richardsonii (1)                  | 416               | 19            | 28                         | 2.0     | 1.5                |
| 10           | Chara (6) Potamogeton spp. (2) P. gramineus (1)                                | 23                | 5             | 64                         | 1.4     | 0.9                |
| 11           | Chara (6) Elodea (1) P. gramineus (1) P. richardsonii (1) P. zosteriformis (1) | 34                |               | 56                         | 1.4     | 0.8                |
| 12           | No plants  | 0                 | 27            | 25                         | 2.8     | 2.4                |
| 13           | Chara (5) P. gramineus (4)   | 46                | 8             | 63                         | 1.2     | 0.7                |
| 14           | Chara (6)<br>P. gramineus (1)<br>P. narrow (1)                                 | 30                | 3             | 77                         | 0.9     | 0.7                |
| 15           | Chara (6) Potamogeton spp. (1)   | 13                | 4             | 76                         | 1.5     | 1.0                |
| 16           | No plants  | 0                 | 34            | 16                         | 2.9     | 2.4                |
|              |  |                   |               |                            |         |                    |

and the state of t

Appendix K
Table 2. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Faum Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

| Grid         | Taxon<br>composition  | Mean plant weight | Mean<br>depth | Mean light<br>transmission |         | nt velocity<br>./s) |
|--------------|---|-------------------|---------------|----------------------------|---------|---------------------|
| intersection | (frequency)   | (g/30 ft. haul)   | (ft.)         | (x)                        | Surface | Bottom              |
| 17           | P. gramineus (3) Potamogeton spp. (2) Chara (1) Elodea (1) Ritella (1) Ritellopsis (1) P. gosteriformis (1) | 92                | 16            | 29                         | 1.3     | 1.0                 |
| 18           | Chara (5) P. gremineus (3) Elodea (1)   | 48                | 3             | 59                         | 0.8     | 0.6                 |
| 19           | No plants   | 0                 | 32            | 26                         | 2.9     | 2.4                 |
| 20           | Chara (6) P. gramineus (4) P. richardsonii (2) Najas (1) Potamogeton spp. (1)                               | 264               | 4             | 60                         | 0.8     | 0.5                 |

Appendix K
Table 3. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Russell Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

| Grid         | Taxon<br>composition   | Mean plant weight | Mean<br>depth | Mean light<br>transmission | Mean current (ft. | ./s)   |
|--------------|--|-------------------|---------------|----------------------------|-------------------|--------|
| intersection | (frequency)  | (g/30 ft. haul)   | (ft.)         | (%)                        | Surface           | Bottom |
| 1            | No plants  | 0                 | 31            | 29                         | 3.1               | 2.4    |
| 2            | Chara (1) P. gramineus (1) Potamogeton spp. (1)                                | 23                | 22            | 24                         | 2.8               | 2.0    |
| 3            | Potamogeton spp. (2)<br>Chara (1)  | 17                | 23            | 20                         | 2.3               | 1.8    |
| 4            | No plants  | 0                 | 41            | 24                         | 3.1               | 2.6    |
| 5            | No plants  | 0                 | 31            | 16                         | 3.0               | 2.6    |
| 6            | Potamogeton spp. (3)<br>Chara (2)<br>P. richardsonii (1)                       | 725               | 11            | 25                         | 2.1               | 1.4    |
| 7            | P. gramineus (6)<br>Chara (5)<br>Potamogeton spp. (3)                          | 508               | 7             | 30                         | 1.9               | 1.1    |
| 8            | No plants  | 0                 | 33            | 36                         | 2.4               | 2.1    |
| 9            | Chara (1)<br>ETodea (1)  | 20                | 28            | 18                         | 2.8               | 2.1    |
| 10           | Chara (5) P. gramineus (4) Potamogeton spp. (2) Elodea (1) P. richardsonii (1) | 269               | 6             | 36                         | 1.2               | 0.5    |
| 1            | Chara (6)<br>P. gramineus (3)<br>Najas (1)                                     | 27                | 4             | 62                         | 1.6               | 0.7    |
| 2            | Chara (6) P. gramineus (3)   | 14                | 5             | 47                         | 1.5               | 0.8    |
| 3            | No plants  | 0                 | 36            | 21                         | 2.4               | 2.1    |
| 4            | Chara (3) P. gramineus (2) Potamogeton spp. (1)                                | 99                | 17            | 33                         | 2.2               | 1.8    |

Appendix K
Table 4. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Belle Isle. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

| Grid<br>intersection | Taxon composition (frequency)   | Mean plant weight | Mean<br>depth | Mean light<br>transmission | (ft     | nt velocity<br>./s) |
|----------------------|---|-------------------|---------------|----------------------------|---------|---------------------|
|                      | (Trequency)   | (g/30 ft. haul)   | (ft.)         | (%)                        | Surface | Bottom              |
| 1                    | Vallisneria (4) Hyriophyllum (2) P. crispus (2) Potamogeton spp. (2) P. richardsonii (2) Elodea (1) P. zosteriformis (1)                            | 882               | 7             | 19                         | 0.8     | 0.4                 |
| 2                    | Chara (1) Potamogeton spp. (1) P. richardsonii (1)  | 17                | 11            | 8                          | 1.8     | 1.1                 |
| 3                    | P. crispus (4) Vallisneria (3) Chara (2) Potamogeton spp. (2) P. richardsonii (2) P. zosteriformis (2) Najas (1)                                    | 142               | 8             |                            | 0.6     | 0.5                 |
| 4                    | No plants   | 0                 | 22            | 3                          | 2.5     | 1.8                 |
| 5                    | No plants   | 0                 | 15            | 4                          | 2.6     | 1.9                 |
| 6                    | No plants   | 0                 | 34            | 2                          | 2.8     | 2.4                 |
| 7                    | Chara (4) P. crispus (4) ValTisneria (4) Potamogeton spp. (3) P. richardsonii (2) Elodea (1)  | 871               | 6             | 34                         | 0.2     | 0.1                 |
| 8                    | No plants   | 0                 | 21            | 2                          | 2.3     | 1.6                 |
| 9                    | No plants   | 0                 | 34            | 2                          | 2.9     | 2.5                 |
| 10                   | Chara (4) P. richardsonii (4) Potamogeton spp. (3) Vallisneria (3) Najas (1) P. zosteriformis (1)   | 27                | 7             | 36                         | 0.4     | 0.3                 |
| 11                   | No plants   | 0                 | 36            | 2                          | 2.9     | 2,5                 |
|                      | Vallisneria (4) Chara (3) P. richardsonii (2) Myriophyllum (1) Najas (1) Niterlopsis (1) P. gramineus (1) Potamogeton spp. (1) P. zosteriformis (1) | 58                | 10            | 6                          | 1.5     | 1.1                 |
| 13                   | No plants   | 0                 | 34            | 2                          | 2.9     | 2,4                 |
|                      | Chara (6)<br>Najas (3)<br>Nitellopsis (3)<br>Valisseria (2)<br>Myrtophyllum (1)   | 88                | 3             | 69                         | 0.2     | 0.1                 |

Appendix K
Table 4. Composition and abundance of submersed macrophytes and physical data from measurements associated with
the sampling grid at Belle Isle. Means are based on six sampling dates in June, July-August, and
September, 1983 and 1984.

| Grid         | Taxon<br>composition  | Mean plant weight | Mean<br>depth | Mean Tight<br>transmission | Mean curre<br>(ft |        |
|--------------|---|-------------------|---------------|----------------------------|-------------------|--------|
| intersection | (frequency)   | (g/30 ft. haul)   | (ft.)         | (%)                        | Surface           | Bottom |
| 15           | Chara (6) Myriophyllum (5) Vallisneria (5) Nitellopsis (4) Hajas (3) Nitella (1) P. zosteriformis (1)   | 157               | 3             | 49                         | 0.2               | . 0.1  |
| 16           | Chara (6) Vallisneria (6) Myriophyllum (4) Majas (4) Mitellopsis (4) Elodea (3) P. gramineus (1) Potamogeton spp. (1) P. zosteriformis (1)                              |                   | 4             |                            | 0.3               | 0.2    |
| 17           | Chara (6) Rajas (3) Myriophyllum (2) Nitellopsis (2) Vallisneria (2) P. gramineus (1)   | 246               | 3             | 57                         | 0.2               | 0.2    |
| 18           | Chara (6) P. richardsonii (4) Vallisneria (4) Najas (3) Potamogeton spp. (3) P. zosteriformis (3) Nitellopsis (2) P. grammeus (2) Elodea (1) Nitella (1) P. crispus (1) | 621               | 10            | 10                         | 0.7               | 0.5    |
| 19           | No plants   | 0                 | 32            | 2                          | 2.7               | 2.3    |
| 20           | No plants   | 0                 | 22            | 4                          | 1.2               | 1.0    |
| 21           | No plants   | 0                 | 20            | 3                          | 1.2               | 1.1    |
| 22           | No plants   | 0                 | 22            | 2                          | 1.6               | 1.3    |
| 23           | No plants   | 0                 | 30            | 2                          | 1.9               | 1.5    |
| 24           | No plants   | 0                 | 34            | 2                          | 2.7               | 2.2    |

Appendix K
Table 5. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

| Grid<br>intersection | Taxon composition (frequency)  | Mean plant weight (g/30 ft. haul) | Mean<br>depth<br>(ft.) | Mean light transmission (%) |     | nt velocity<br>./s)<br>Bottom |
|----------------------|--|-----------------------------------|------------------------|-----------------------------|-----|-------------------------------|
| 1                    | No plants  | 0                                 | 33                     | 4                           | 1.0 | 0.8                           |
| 2                    | Potamogeton spp. (6)<br>Vallismeria (4)  | 826                               | 6                      | 22                          | 0.3 | 0.1                           |
| 3                    | No plants  | 0                                 | 33                     | 4                           | 1.0 | 0.7                           |
| 4                    | Potamogeton spp. (4) Vallisheria (4) P. crispus (1)  | 920                               | 6                      | 19                          | 0.2 | 0.1                           |
| 5                    | P. richardsonii (2)<br>Vallisneria (2)   | 51                                | 19                     | 11                          | 1.4 | 1.1                           |
| 6                    | Potamogeton spp. (2)<br>Nitella (1)<br>Vallisneria (1)                                     | 42                                | 18                     | . 15                        | 0.8 | 0.4                           |
| 7                    | Potamogeton spp. (4) Vallismeria (3) Ranunculus (1)  | 917                               | 6                      | 19                          | 0.3 | 0.1                           |
| 8                    | Vallisneria (2) Potamogeton spp. (1) P. richardsonii (1)                                   | 2                                 | 18                     | 11                          | 1.7 | 1.2                           |
| 9                    | No plants  | 0                                 | 31                     | 7                           | 1.2 | 0.7                           |
| 10                   | Vallisneria (5) Potamogeton spp. (2) Chara (1) Nitella (1) Nitellopsis (1)                 | 182                               | 7                      | 18                          | 0.2 | 0.1                           |
| 11                   | Vallisneria (4)<br>Chara (3)<br>Potamogeton spp. (3)<br>Elodea (2)                         | 581                               | 6                      | 20                          | 0.4 | 0.2                           |
| 12                   | P. richardsonii (2)<br>Vallisneria (2)<br>P. zosteriformis (1)                             | 106                               | 21                     | 16                          | 1.7 | 1.0                           |
| 13                   | No plants  | 0                                 | 29                     | 9                           | 1.3 | 0.8                           |
| 14                   | Vallisneria (4) Potamogeton spp. (2) Chara (1) Heteranthera (1) Nitellopsis (1)            | 198                               | 7                      | 28                          | 0.2 | 0.1                           |
| 15                   | Chara (4) Vallisneria (4) Witelia (2) Potamogeton spp. (2) Myriophyllum (1) P. crispus (1) | 163                               | 6                      | 28                          | 0.4 | 0.2                           |
| 16                   | Vallisneria (2) Chara (1) P. gramineus (1) Potamogeton spp. (1) P. zosteriformis (1)       | 92                                | 18                     | 15                          | 1.2 | 0.6                           |
| 17                   | No plants  | 0                                 | 28                     | ٤                           | 1.0 | 0.6                           |
| CONTINUED            |  |                                   |                        |                             |     |                               |

K-8

Appendix K
Table 5. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

| Grid         | Taxon<br>composition   | Mean plant weight | Mean<br>depth | Mean light transmission | Mean curre<br>(ft | ./s)   |
|--------------|--|-------------------|---------------|-------------------------|-------------------|--------|
| intersection | (frequency)  | (g/30 ft. haul)   | (ft.)         | (%)                     | Surface           | Bottom |
| 18           | Vallisneria (4) Chara (3) Myriophyllum (1) Nitella (1) Potamogeton spp. (1)                  | 120               | 7             | 26                      | 0.2               | 0.2    |
| 19           | Chara (5) Vallisneria (4) Potamogeton spp. (2) Nitella (1) P. richardsonii (1)               | 169               | 6             | 34                      | 0.2               | 0.1    |
| 20           | P. richardsonii (1)<br>Vallismeria (1)   | 19                | 22            | 13                      | 1.1               | 0.7    |
| 21           | No plants  | 0                 | 28            | . 6                     | 1.2               | 0.8    |
| 22           | Vallisneria (4) Potamogeton spp. (3) Chara (3) Heteranthera (1) P. richardsonii (1)          | 174               | 7             | 23                      | 0.3               | 0.2    |
| 23 ·         | Chara (4) Vallisneria (4) Myriophyllum (3) Potamogeton spp. (3) Elodea (1) Heteranthera (1)  | <b>266</b>        | 6             | 30                      | 0.4               | 0.2    |
| 24           | Najas (2) P. richardsonii (2) Vallisneria (2) P. zosteriformis (1)                           | 101               | 23            | 8                       | 1.2               | 0.9    |
| 25           | No plants  | 0                 | 27            | 6                       | 1.1               | 0.0    |
| 26           | Vallisneria (5) Chara (3) Potamogeton spp. (2) Heteranthera (1) Myriophyllum (1) Nitella (1) | 232               | 9             | 16                      | 0.3               | 0.:    |
| 27           | Vallisneria (4) Chara (3) Myriophyllum (1) Potamogeton spp. (1) Najas (1) P. crispus (1)     | 215               | 6             | 20                      | 0.2               | 0.     |
| 28           | No plants  | 0                 | 32            | 6                       | 1.9               | 1.     |
| 29           | No plants  | 0                 | 23            | 5                       | 1.2               | 0.     |
| 30           | Vallisneria (3)<br>Chara (2)<br>Potamogeton spp. (2)<br>Mitelia (1)                          | 61                | 15            | 16                      | 0.5               | 0.     |
| 31           | Vallisneria (4) Chara (2) Potamogeton spp. (2) Myriophyllum (1) Mitelia (1)                  | 227               | 6             | 19                      | 0.3               | 0.     |
| 32           | No plants  | 0                 | 33            | 7                       | 2.0               | 1.     |
| CONTINUED    |  |                   |               |                         |                   |        |

to the second of

Appendix K
Table 5. Composition and abundance of submersed macrophytes and physical cata from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

| Grid         | Taxon<br>composition  | Mean plant weight | Mean<br>depth | Mean Tight<br>transmission | (ft     | nt velocity<br>./s) |
|--------------|---|-------------------|---------------|----------------------------|---------|---------------------|
| intersection | (frequency)   | (g/30 ft. haul)   | (ft.)         | (%)                        | Surface | Bottom              |
| 33           | Chara (1) Potamogeton spp. (1) Vallisneria (1)  | 28                | 20            | 14                         | 0.5     | 0.3                 |
| 34           | Vallisneria (5) P. crispus (2) Potamoqeton spp. (2) Chara (1) Myriophyllum (1) P. gramineus (1) P. richardsonii (1) | 295               | 8             | 8                          | 0.5     | 0.2                 |
| 35           | No plants   | 0                 | 32            | 4                          | 2.0     | 1.5                 |
| 36           | Vallisneria (2)<br>Potamogeton spp. (1)   | 38                | 21            | 10                         | 0.7     | 0.4                 |
| 37           | Vallisneria (2)<br>Potamogeton spp. (1)<br>P. richardsonii (1)  | 347               | 22            | . 7                        | 0.9     | 0.6                 |
| 38           | No plants   | 0                 | 32            | 7                          | 2.2     | 1.6                 |
| 39           | No plants   | 0                 | 23            | 4                          | 1.1     | 0.6                 |
| <b>\$</b> 0  | No plants   | 0                 | 28            | 7                          | 1.8     | 1.5                 |
|              |   |                   |               |                            |         |                     |

Appendix K
Table 6. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stony Island. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

| Grid         | Taxon<br>composition   | Mean plant weight | Mean<br>depth | Mean light transmission | Mean curren<br>(ft. | /s)    |
|--------------|--|-------------------|---------------|-------------------------|---------------------|--------|
| intersection | (frequency)  | (g/30 ft, haul)   | (ft.)         | (%)                     | Surface             | Bottom |
| 1            | Vallisneria (4) Potamogeton spp. (2) Myriophyllum (1) P. zosterfformis (1)   | 203               | 9             | 6                       | 1.3                 | 0.7    |
| 2            | Potamogeton spp. (5)<br>Vallisneria (4)<br>P. richardsonii (1)   | 620               | 8             | 9                       | 1.0                 | 0.6    |
| 3            | Vallisneria (5) Potamogeton spp. (3) Myriophyllum (1) P. crispus (1) P. zosteriformis (1)                            | 345               | 8             | 13                      | 0.8                 | 0.4    |
| 4            | Vallisneria (5) Potamogeton spp. (3) Myriophyllum (2) Elodea (1)   | 314               | 10            | . 9                     | 0.5                 | 0.2    |
| 5            | Vallisneria (3) Potamogeton spp. (2) ETodea (1) Heteranthera (1) MyriophyTium (1) P. crispus (1) P. richardsonii (1) | 333               | 10            | 9                       | 0.6                 | 0.3    |
| 6            | P. zosteriformis (2) Potamogeton spp. (1) Vallisneria (1)  | 41                | 11            | 14                      | 1.8                 | 1.1    |
| 7            | Potamogeton spp. (5)<br>Vallismeria (4)<br>Heteranthera (1)  | 869               | 7             | 9                       | 1.0                 | 0.4    |
| 8            | Vallismeria (3) Heteranthera (1) P. crispus (1) Potamogeton spp. (1)   | 84                | 8             | 16                      | 1.4                 | 1.0    |
| 9            | Heteranthera (2) Myriophyllum (2) P. crispus (1) Potamogeton spp. (1) Vallisneria (1)                                | 38                | 8             | 29                      | 0.4                 | 0.2    |
| 10           | P. crispus (1)   | 1                 | 10            | 8                       | 0.4                 | 0.2    |
| 11           | Vallisneria (3) Potamogeton spp. (1)   | 31                | 9             | 13                      | 1.3                 | 0.7    |
| 12           | Elodea (4) Heteranthera (4) Hyrlophyllum (4) P. crispus (3) Vallisneria (3)  | 1667              | 4             | 32                      | 0.2                 | 0.1    |
| 13           | Elodea (5) Neteranthera (3) P. crispus (3) Butomus (1) Vallisheria (1)   | 1866              | 3             | 31                      | 0.1                 | 0.0    |

Appendix K
Table 6. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stony Island. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

| Grid         | Taxon<br>composition  | Mean plant weight | Mean<br>depth | Mean light<br>transmission | (ft     | nt velocity<br>./s) |
|--------------|---|-------------------|---------------|----------------------------|---------|---------------------|
| intersection | (frequency)   | (g/30 ft. haul)   | (ft.)         | <u>(x)</u>                 | Surface | Bottom              |
| 14           | No plants   | 0                 | 10            | 8                          | 2.6     | 1.6                 |
| 15           | Vallisneria (4) Butomus (1) Heteranthera (1) P. crispus (1) Potamogeton spp. (1)    | 146               | 6             | 17                         | 1.5     | 8.0                 |
| 16           | Heteranthera (3)<br>P. crispus (2)<br>Myriophyllum (1)                              | 2554              | 3             | 36                         | 0.3     | 0.3                 |
| 17           | Elodea (4) Heteranthera (3) Myriophyllum (1) P. crispus (1) Ranuculus (1) Typha (1) | 895               | 2             | <b>.</b>                   | 0.2     | 0.1                 |
| 18           | No plants   | 0                 | 8             | 22                         | 2.3     | 1.4                 |
| 19           | Vallisneria (5)<br>Heteranthera (2)<br>Myriophyllum (1)                             | 50                | 3             | 48                         | 1.2     | 0.6                 |
| 20           | Heteranthera (2)<br>Vallisneria (2)<br>P. crispus (1)                               | 11                | 6             | 27                         | 2.4     | 1.7                 |

APPENDIX L

Ponar Grab Collections of Submersed Macrophytes

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

ST. CLAIR STAG

ISLAND

RIVER

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE \* LESS THAN 0.001 G/M2

| BLOCK       | REPLICATE                             |                                       | AN                                    | DEPTH               | MACE                                    | MACROPHYTE                             | DRY WEIGHT                               | ASH-FREE L                                   | .1GHT (F00T                           | CANDLES) | CURRENT (F                              | T./SEC.) |
|-------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------|---|--|--|--|---------------------------------------|----------|---|----------|
| 2           | Z                                     | UPPER LOWE                            | NATES                                 | (FT.)               |   | TAXON                                  | (G/M2)                                   | WEIGHT<br>(G/M2)                             | SURFACE                               | BOTTOM   | SURFACE                                 | BOTTOM   |
| -           |                                       | 309026                                | 497383                                | 12.0                | N<br>H<br>H                             | NO PLANTS                              | PRESENT                                  | 10<br>10<br>10<br>14<br>16<br>17<br>11<br>11 | 3200                                  | 1900     | 2.1                                     |          |
|             | N 10                                  | 309026                                | 497384                                | 0.0                 |   | NO PLANTS                              | PRESENT                                  |  |                                       | 2200     | 0 0<br>0 -                              | 4        |
| - 1         | 4                                     | 309027                                | 497384                                | 11.0                | 1                                       |  | PRESENT                                  |  |                                       | 2100     | 2.3                                     | .3       |
| 7           |                                       | 309041                                | 497387                                | 12.0                |   |  | PRESENT                                  | # N # N N N N N N N N N N N N N N N N N      | #<br>#<br>#                           | 2300     | 2.4                                     | 1.0      |
|             | 0,1                                   | 309041                                | 497387                                | 0.25                |   |  | PRESENT                                  |  |                                       | 2300     | 2.5                                     | F.       |
|             |                                       | 309042                                | 497388                                | 2.0                 | •                                       | NO PLANTS                              | PRESENT                                  |  | 000                                   | 2200     | 7 6                                     | O m      |
|             |                                       | 309031                                | 497388                                |                     |   |  | DOFCENT                                  | ****   |                                       |          |   |          |
| •           | . 14                                  | 309031                                | 497388                                | 0.6                 |   |  | PRESENT                                  |  |                                       | 2900     | 4.                                      | , L      |
|             |                                       | 309030                                | 497389                                | 0.8                 |   |  | PRESENT                                  |  |                                       | 2200     | 4.                                      | 4.       |
| #<br>#      | 4                                     | 309030                                | 497390                                | 0.0                 |   | NO PLANTS                              | PRESENT                                  |  |                                       | 2200     | 2.0                                     |          |
| 4           | -                                     | 309038                                | 497394                                | 13.0                |   | NO PLANTS                              | PRESENT                                  |  |                                       | 2100     | 8.1                                     | 6.0      |
|             |                                       | 309041                                | 497394                                | 13.0                |   |  | PRESENT                                  |  |                                       | 2200     | 2.0                                     | 1.2      |
|             |                                       | 309042                                | 497395                                | 12.0                |   |  | PRESENT                                  |  |                                       | 2200     | 5.0                                     | <br>G:   |
| #<br>#<br># | 4                                     | 309042                                | 497395                                | 11.0                | *************************************** | NO PLANTS                              | PRESENT                                  |  | 3300                                  | 2300     | 2.1                                     | 1.5      |
| 1           | -                                     | 309037                                | 497397                                | 5.5                 | CHARA                                   | SPP.                                   | 6.7                                      | 3.2  | 3200                                  | 2100     | 1.6                                     | 4.4      |
|             |                                       |                                       |                                       |                     | POT.                                    | NARROW                                 | 30.4                                     | 20.1   |                                       |          |   |          |
|             | # # # # # # # # # # # # # # # # # # # | # # # # # # # # # # # # # # # # # # # | # # # # # # # # # # # # # # # # # # # | **                  |   | GRAMINEUS<br>Reservedos                | 4.4.4                                    | D·   | # # # # # # # # # # # # # # # # # # # |          | *************************************** |          |
|             |                                       | 309035                                | 497397                                | 0.9                 | -                                       | NARROW                                 | 15.2                                     | 10.7   | 4000                                  | 2500     | 2.0                                     | 1.6      |
|             |                                       |                                       |                                       |                     |   | RICHARDSONI                            | 10.6                                     | 4.4  |                                       |          |   |          |
|             |                                       | 309035                                | 497396                                | 0.9                 |   | NARROW                                 | 38.4                                     | 26.4   |                                       | 2700     | 2.1                                     |          |
|             | # 4                                   | 309036                                | 497398                                | 0.9                 | CHARA                                   | SPP.                                   | . 7.4                                    | 2.9  | 3500                                  | 2900     | 2.4                                     | 1.3      |
|             |                                       |                                       |                                       |                     |   | NARROW<br>GRAMINEUS                    | 73.0                                     | 4.<br>4.                                     |                                       |          |   |          |
| 9           | -                                     | 309041                                | 497398                                | 0.0                 | CHARA<br>POT.                           | A SPP. NARROW                          | 32.4                                     | 7.5  | 3600                                  | 2500     | 2.4                                     | 0.1      |
|             | 2                                     | 309042                                | 497400                                | 0.6                 | CHARA<br>POT.                           | SPP.<br>NARROW                         | 6.1                                      | 33.0   | 3900                                  | 2000     | 2.4                                     | 1.5      |
|             |                                       | 309043                                | 497400                                | 7.0                 | CHARA<br>POT.                           | SPP.                                   | 18.9                                     |  | 3800                                  | 1000     | 2.2                                     | 9.0      |
|             | #<br>#<br>#                           | 309043                                | 497401                                | o.<br>9             | CHARA                                   | SPP.                                   | # # # # # # # # # # # # # # # # # # #    | 1.8  | 3100                                  | 2600     |   | . 6      |
|             | e<br>K                                | 309042                                | 497400                                | 7.5                 | P01.                                    | GRAMINEUS                              |  | 9 O. C.  | 3700                                  | 1300     |   | ,        |
|             | # G                                   | 309042                                | 497401                                | 8 6<br>8 75<br>8 75 | CHARA<br>POT.                           | SPP.<br>GRAMINEUS                      | 127.1<br>5.0                             | # # # # # # # # # # # # # # # # # # #        | 3700                                  | 1300     | K<br>M<br>H<br>H<br>H<br>H<br>H         |          |
| ***         |                                       | 网络鼠科科教徒                               |                                       | 2. 新新日報日            |   | 医医医检检检检检检检检检检检检检检检检检检检检检检检检检检检检检检检检检检检 | 化二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 | 的对法律的外的经验的行行                                 | 计计划转换的数据计算                            |          |   |          |

| - N          | 309039         | 497401   | 0.80          | CHARA SPP. ELODEA CANADENS POT. NARROW                               | 26.3<br>22.8<br>5.2  | 15.1<br>15.3<br>4.1  | 3500 | 2700 | <b>8</b> 0                              | 0<br>4          |
|--------------|----------------|----------|---------------|--|----------------------|----------------------|------|------|---|-----------------|
| #            | 309034 49      | 73       | 4 5           | POT. NARROW<br>POT. GRAMINEUS  | 400<br>0.01          | 5.8                  | 2600 | 2500 | 4 · · · · · · · · · · · · · · · · · · · |                 |
|              | 309035         | 13       | <b>4</b><br>0 | CHARA SPP.<br>POT. NARROW  | 21.5<br>41.7         | 5.6<br>29.0          | 3000 | 2900 |   | . O             |
| : :          | 309035 49      | 497399   | <b>4</b> .0   | CHARA SPP.<br>Pot. Richardsoni                                       | 4.55<br>4.05         | 0.6<br>14.9          | 3800 | 2600 |   | # 60.           |
|              | 309044 49      | 497403   | φ             | CHARA SPP.<br>ELODEA CANADENS<br>POT. NARROW<br>MYRIO. EXALBESC      | ე ო ი დ<br>დ 4 ო -   | 0.0<br>7.0<br>7.0    | 2100 | 1900 |   |                 |
| •            | 309044 49      | 497405   | O. 00         | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI               | 1.0<br>44.2<br>7.7   | 0.45<br>0.50<br>0.00 | 3000 | 2200 | 6.<br>O                                 | 4.0             |
| က            | 309044 49      | 497403   | 10.0          |  | 11.2<br>63.0<br>6.0  | 9.0<br>9.0<br>9.9    | 2900 | 2200 | 4                                       | 0.7             |
| 4            | 4 309046 49    | 497404   | 7.0           | POT. NARROW  | 159.0                | 124.4                | 3100 | 1400 |   |                 |
| ro.          | 309045 49      |          | 7.0           |  | 55.2                 | 41.7                 | 3100 | 1400 | 1                                       |                 |
| 9            | 6 309046 49    |          | 7.0           |  | 111.1                | 84.6                 | 3100 | 1400 |   |                 |
| 7            | 7 309045 49    | 497404   | 7.0           | POT. NARROW<br>NITELLA HYALINA<br>POT. GRAMINEUS                     | 24.8<br>58.0<br>0.7  | 17.6<br>19.5<br>0.5  | 2500 | 1300 | 1                                       | •               |
| <b>6</b> 0   | 8 309046 49    | 497403   | 7.0           | i ∢ T ĭ i  | 200<br>.9 ± 2        | 0 0 <u>0</u>         | 2500 | 1300 | ı                                       | '               |
|              |                | 497403   | 7.5           | POT. NARROW<br>POT. GRAMINEUS  | 32.5<br>22.2         | 25.6<br>15.2         | 2500 | 1300 | ʻ                                       | ,               |
| ō            | 30904          | 5 497406 | o.            | ARA<br>OCEA  | c. 4<br>2. 0. 0. 0.  | 4.46<br>4.46         | 3000 | 2000 | o.<br><del>-</del>                      | 9·0             |
| l            | 309037 49      | 497403   | 11.0          | CHARA SPP.<br>ELODEA CANADENS<br>POT. NARROW                         | 2.1.4<br>65.9<br>6.3 | 11.2<br>39.5<br>1.5  | 2500 | 1900 | o<br>Ri                                 | e. 0            |
| 7            | 309043 49      | 497403   | ຍ<br>ເບ       | CHARA SPP.<br>ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI | 14.0<br>6.6<br>19.7  | 7.2<br>4.3<br>13.1   | 4500 | 2300 | 1.7                                     | o. <del>.</del> |
| က            | 3 309044 49    | 497406   | 10.0          | CHARA SPP.<br>ELODEA CANADENS<br>Myrio. Spicatum                     | 14.7<br>36.6<br>40.1 | 7.5<br>19.3<br>29.0  | 3100 | 2000 | 6.0                                     | 4.0             |
| <br> -<br> - | <br> <br> <br> |          | <br> <br>     |  |                      |                      |      |      |   |                 |

| <b>-</b>    | 7                  |  |                 |             |                | #              | H<br>H<br>0   |                 |                                    | *<br>*<br>*  |  |  |              |             |            |             |  |                    | _                             |
|-------------|--------------------|--|-----------------|-------------|----------------|----------------|---|-----------------|------------------------------------|--|--|--|--------------|-------------|------------|-------------|--|--------------------|-------------------------------|
| Ö           | 0.7                | 6.<br>0                                      | ю.<br>О         | 0.8         | 0.7            | 0.5            | 0   | 0.0             |                                    |  | 0.3  | . O  | 0.3          | 0.3         |            |             | 0.1  | 0.1                | 0.0                           |
| •           | . 5                | H<br>H<br>H<br>H<br>TO                       | 6.0             | 1.7         | 1.2            | 6.0            | 4.0   | 1.2             | 10 C                               | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4              |  | 0.7  | o.3          | <b>0</b> .4 | 1          |             | 0.   | o. <del>-</del>    | <del>-</del>                  |
| 2700        | 2000               | 1800   | 2 100           | 2300        | 000 <u>-</u>   | 700            | 1800  | 2900            | 1300                               | 1300   | 1300   | 1700   | 1500         | 2900        | 2400       | 2400        | 170  | 250                | 450                           |
| 2900        | 2500               | 1900   | 3600            | 3000        | 3200           | 2500           | 3700  | 3500            | 3200                               | 3200   | 2 <del>9</del> 00                                  | 3000   | 3300         | 3700        | 3500       | 3500        | 340  | 570                | 700                           |
| 34.7        | 11.9               | # 9 9 N                                      | 6.5             | 8.2         | 6.7            | 2.9            | 28.3<br>35.8<br>10.7  | 14.0            | 83.5<br>0.9                        | 160.9<br>17.9<br>2.8                               | 3.55<br>3.55<br>37.88                              | 53.0<br>2.2<br>44.2  | 15.1         | 13.6        | 17.9       | 58.7        | 12.8   | 15.7<br>1.9<br>2.6 | 25.2                          |
| 93.4        | 25.3               | 19.1<br>TRACE<br>0.9                         | 12.0            | 12.9        | 14.8           | 4.6            | TRACE<br>2.3<br>39.4<br>47.6<br>12.6                                | 34.4            | 125.9<br>1.8                       | 248.3<br>23.1<br>3.4                               | 63.3<br>6.00<br>4.0.4                              | 3.8<br>78.9<br>2.1<br>20.3                                       | 22.7<br>17.0 | 37.7        | 56.3       | 174.1       | 21.3<br>2.7<br>28.3                                | 36.3<br>2.5<br>3.7 | 0.2<br>39.8                   |
| CHARA SPP.  | CHARA SPP.         | CHARA SPP.<br>ELODEA CANADENS<br>POT. NARROW | CHARA SPP.      | CHARA SPP.  | CHARA SPP.     | CHARA SPP.     | CHARA SPP. ELODEA CANADENS POT. NARROW MYRIO. SPICATUM POT. CRISPUS | CHARA SPP.      | ELODEA CANADENS<br>NITELLA HYALINA | ELODEA CANADENS<br>POT. NARROW<br>POT. RICHARDSONI | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. CRISPUS | CHARA SPP.<br>ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. CRISPUS |              | CHARA SPP.  | CHARA SPP. | CHARA SPP.  | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. CRISPUS |                    | CHARA SPP.<br>ELODEA CANADENS |
| <b>4</b> .0 | 12.0               | o.<br>6                                      | 0.1             | <b>8</b> .0 | <b>4</b><br>0. | ٥.<br>٥        | 0.0   | <b>4</b><br>0.  | ອ<br>ຄ                             | 6.<br>9  | 12.0   | ဝ<br>၈   | 0.0<br>0.0   | 0.4         | 0.6        | 0.4         | 12.0   | 0.                 | 12.0                          |
| •           | 497412             | 497412                                       | 497412          |             | 497410         | 497411         | 37411   | 497413          | 497411                             | 497411   | 497408   | 497408   | 497407       |             | 497408     |             | 497414   | 497416             | 497414                        |
| 309035      | 10 1 309056 497412 | 2 309054 497412                              | 3 309056 497412 | 4 309055 4  | 309099 497410  | 2 309050 49741 | 309048 497411   | 4 309052 497413 |                                    | 309048 497411                                      | 1 309039 497408                                    | 2 309038 49  | 3 309039 48  | 4 309039 48 | 309039 4   | 6 309039 48 | 13 1 309058 497414                                 |                    | 309058 497414                 |
| 4           |                    | 5  | 0               | 4           | -              | 2              | e   | 4               | ស                                  | ဖ  |  | 7  | 6            | 4           | ıc         | 9           | # <del>-</del>                                     |                    | 0                             |
|             | <b>Q</b>           |  |                 |             | -              |                |   |                 |                                    |  | <b>5</b>   |  |              |             |            |             | 6.<br>6.<br>8.                                     |                    |                               |

L-3

(

terroran care y

|    |    |          | 9<br>9<br>8<br>11<br>11<br>12<br>2 |             | 0.0                                   | CRISPUS<br>ZOSTERIFORM  | 27.3                | 2.<br>5. 3.           |              |   |     |     |
|----|----|----------|------------------------------------|-------------|---------------------------------------|---|---------------------|-----------------------|--------------|---|-----|-----|
|    | 4  | 4 309060 | 497416 10.5                        | . 0<br>. 5  | CHARA<br>ELODE<br>POT<br>MYRIO<br>POT | CHARA SPP.<br>ELODEA CANADENS<br>POT. NARROW<br>MYRIO. SPICATUM | 20.8<br>3.2<br>10.3 | 2.5<br>7.2.7<br>7.6.6 | 7300<br>7300 | 009                                     | 0   | 0.0 |
| 14 | -  | 1 309069 | 497422                             | • •         |                                       | CHARA SPP.  | 7.1                 |                       | 250          | 160                                     |     | 0.7 |
|    | 7  | 2 309070 | 497424                             | N 1         | <b>H</b> [                            | CHARA SPP.  | 20.9                | 7.9                   | 180          | 430                                     | 2.4 | 0.2 |
|    | 6  | 3 309072 |                                    | 7.0         |                                       | CHARA SPP.  | 11.6                | 7.7                   | 210          | 140                                     | 2.3 | 0.3 |
|    | 4  | 4 309073 |                                    | 7.0         | P01.                                  | POT. NARROW<br>POT. GRAMINEUS                                   | 14.3<br>25.4        | 9.1                   | 260          | #<br>                                   |     |     |
|    | ဖာ | 5 309079 | 497425 6.0                         | <b>6</b> .0 | !                                     | CHARA SPP.  | 40.8<br>6.3         | юљ<br>0-              | 2600         | 1300                                    | =   |     |
|    | 9  | 6 309078 |                                    | 0.<br>9     |                                       | POT. NARROW   | 19.7                | 14.3                  | : `T         | #<br>#<br>#<br>#                        |     | #   |
| 15 |    | 1 309075 |                                    | 9,0         | i i                                   | CHARA SPP.  | 8.4                 | 3.7                   | 230          | 190                                     | 1.2 |     |
|    | 7  | 2 309075 |                                    | 3.5         | ! - !                                 | SPP.  | 31.7                | 12.9                  | 260          | 210                                     | 8.0 | 8.0 |
|    | က  | 3 309075 | 497430                             | မ<br>ဗ      | CHARA<br>POT.                         | CHARA SPP.<br>POT. GRAMINEUS                                    | 54.3                | 22.4<br>1.1           | 240          | 180                                     | 0.7 | 0.4 |
|    | 4  | 309077   |                                    | 2.5         | CHARA SPP<br>POT. NARRO               | A SPP.<br>NARROW<br>GRAMINEUS                                   | 3.0<br>27.0<br>8.3  | 19.6<br>13.1          | 320          | 7 m m m m m m m m m m m m m m m m m m m | 1.2 | 0.7 |

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND   | ISLAND | BLOCK<br>NO.    | <b>~</b> # | EPLICATE LORA<br>NO. COORDIN | RAN<br>INATES<br>LOWER | DEPTH<br>(FT.)  |                       | MACROPHYTE<br>TAXON                                | DRY WEIGHT (G/M2)       | ASH-FREE L<br>WEIGHT<br>(G/M2) | IGHT (FOOT       | CANDLES)   | CURRENT (FT         | r./SEC.)     |
|----------------|--------|-----------------|------------|------------------------------|------------------------|-----------------|-----------------------|--|-------------------------|--------------------------------|------------------|------------|---------------------|--------------|
| ST. CLAIR FAWN | FAWN   | <b>-</b>        |            | 1 309569 4                   | 498251                 | 10.0            | CHARA<br>POT.<br>POT. | A SPP.<br>Narrow<br>Gramineus                      | 69.3<br>17.3<br>73.3    | 26.2<br>9.4<br>39.2            | 3000             | 1000       | 1.3                 | <del>-</del> |
|                |        |                 | 7          | 309570                       | 498252                 | ر<br>ت          |                       | GRAMINEUS<br>RICHARDSONI                           | 57.2<br>2.6             | 30.0<br>2.1                    | 3200             | 006        | # -                 | 4.           |
|                |        |                 | ო          | 309571                       | 498252                 | න<br>ත          | . <u> </u>            | SPP.   | 22.6<br>33.6            | 6.2<br>21.0                    | 3400             | 000<br>000 | 4.4                 | o.<br>-      |
|                |        | •               | 4 309570   | 309570                       | 498251                 | 9.5             | POT.                  | POT GRAMINEUS                                      | 72.1                    | 46.5                           | 3500             | 1700       |                     |              |
|                |        | 7               | -          | 309572                       |                        | O.<br><b>60</b> | CHARA<br>POT.         | SPP.   | 8.5                     | 2.0<br>8.9                     | 4300             | 1900       |                     |              |
|                |        |                 | 6          | 309570                       | 498255                 | <b>6</b> 0      | P01.                  | NARROW<br>GRAMINEUS<br>RICHARDSONI                 | e 4                     | 2.0<br>2.0<br>8.0              | 4400             | 2100       |                     | 1.2          |
|                |        |                 | n          | 3 309571 4                   | 498256                 | 60<br>0.        | ! ≤                   | SPP.<br>RICHARDSONI<br>NARROW                      | 10.68<br>10.68<br>147.3 | 4.9<br>2.0<br>91.4             | 4000             | 0061       | # 80<br># 40<br># + | 4.           |
|                |        |                 | 4          |                              | 498257                 | 0.<br>0.        | <br>                  | NARROW<br>RICHARDSONI                              | 101.1                   | 41.2                           | 4200             | 1700       |                     | 1.3          |
|                |        |                 | ភ          | 309572                       | 498257                 | 80<br>10        | POT.<br>NITEL<br>POT. | POT. NARROW<br>NITELLA HYALINA<br>POT. RICHARDSONI | 20<br>8.00<br>8.4.      | 1.0<br>0.5<br>48.7             | <del>1</del> 000 | 580        | ı                   | 1            |
|                |        |                 | ဖ          | 309571                       | 498257                 | o.<br>6         | POT.<br>NITEL<br>POT. | POT. NAROW<br>NITELLA HYALINA<br>POT. GRAMINEUS    | 12.0<br>56.8<br>23.4    | 9.4<br>20.6<br>16.6            | 000              | 580        | 1                   |              |
|                |        | #<br>#<br># (7) | #<br>#     | 309578                       | 498255                 | 0.6             | CHARA<br>Pot.         | A SPP.<br>RICHARDSONI                              | 4.3                     | 1.9                            | 3500             | 1900       | 2 -                 | B            |
|                |        |                 | 7          | 2 309579                     | 498255                 | <b>6</b>        |                       | GRAMINEUS  | 4.3                     | 2.0                            | 3200             | 1900       | 1.7                 | 3            |
|                |        |                 |            | 309581                       | 498256                 | <b>8</b> 0.     | <b>4</b> .            | SPP.   | 1.9                     | 1.2<br>9.7                     | 3600             | 2000       | 4.4                 | c.           |
|                |        |                 | 4          | 309584                       | 498259                 | 7.0             | CHARA<br>POT.         | SPP.   | 5.5                     | 2.9<br>11.0                    | 4200             | 2000       | 4.4                 | 1.2          |
|                |        | 4               | #<br>#     | 1 309573                     | 498259                 | O.              | CHARA<br>POT.         | CHARA SPP.<br>Pot. Gramineus                       | 52.6<br>9.0             | 22.8<br>6.1                    | 3000             | 1800       | 9                   |              |
|                |        |                 | ٦          | 2 309574                     | 498260                 | in<br>D         | CHARA<br>POT.         | SPP.<br>GRAMINEUS                                  | 2.9<br>16.0             | 1.2<br>7.7                     | 3200             | 2100       | 2.0                 |              |
|                |        |                 | 6          | 309575                       | 498259                 | 0.<br>9         | CHARA                 |  | 0.7                     | 0.1                            | 3500             | 2300       | 6.1                 | 4.4          |

| 1   |                  | 1      |            | POT. GRAMINEUS<br>POT. NARROW                      | 3.6<br>41.0        | 31.7                | 1            |              |   |  |
|-----|------------------|--------|------------|--|--------------------|---------------------|--------------|--------------|---|--|
| S.  | 309573 4         | 498260 | 5.5        | CHARA SPP.   | 77.8               | 23.2                | 1300         | 1000         | 100 100 100 100 100 100 100 100 100 100 | i.<br>i.                               |
| ဖ   | 309574           | 498261 | 7.0        | CHARA SPP.<br>NITELLA HYALINA<br>POT. RICHARDSONI  | 6.0<br>1.2<br>76.2 | 2.7<br>0.4<br>62.9  | 1300         |              | iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii  | i ,                                    |
| 7   | 7 309574 4       | 498261 | 7.5        | NEUS   | 249.0<br>37.2      | 82.8<br>27.4        | 1300         |              | pa                                      | 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| 1 1 | 309575 4         | 498261 | O.         | CHARA SPP.<br>POT. NARROW<br>POT. GRAMINEUS        | 39.2<br>28.3       | 0.3<br>31.7<br>22.5 | 1400         | 590          |   | ## ## ## ## ## ## ## ## ## ## ## ## ## |
| 6   | , ,              | 498261 | 5.0        | CHARA SPP.<br>Pot. Narrow                          | 85.6<br>68.3       | 23.0<br>50.8        | 1400         | 590          |   |  |
| -   | 309588 4         | 498260 | 7.0        | CHARA SPP.<br>Pot. Narrow<br>Pot. Gramineus        | 0.0<br>4.0<br>8.0  | 5.0<br>2.7<br>7.1   | 3300         | 1600         | 1.7                                     | 2.                                     |
| 101 | 309589           | 498261 | o.<br>80   | POT. NARROW<br>POT. GRAMINEUS<br>POT. RICHARDSONI  | 9.5<br>4.0.        | 0 0 0<br>0 0 0 0    | 3500         | 1500         | <del>.</del><br>6.                      | 1.2                                    |
|     | 309590 4         | 498260 | 11.0       | ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW | 11.0<br>16.7<br>8  | 88.7<br>7.80<br>1.1 | 3600         | 1300         | e.                                      | 9.0<br>•                               |
| 4   | 309592 4         | 498262 | 12.0       | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI  | 1.2<br>1.5<br>13.7 | 0 0 0<br>0 0 0      | 3000         | 1300         | æ.                                      | 1.2                                    |
|     | 1 309586 4       |        | 4          | CHARA SPP.   | 16.0               | 9.                  | 2600         | 1900         | 8.                                      | 9                                      |
| 7   | 2 309586 4       | 498262 | 4.         | CHARA SPP.   | 14.9               | 80<br>R:            | 3500         | 2000         | J. 5                                    | 4                                      |
| 6   | 3 309587 4       |        | 4<br>0     | ! _!   | <del>1</del> .0    | 9.0                 | 3000         | 1900         | 4.4                                     | ·<br>•                                 |
|     | 4 309587 4       |        | 4          | ! -!   | 12.4               | 6.3                 | 3200         | 2200         | 1.5                                     | -                                      |
| -   | 309577           |        | 4<br>0     | !!   | 0.6                | 5.5                 | 2300         | 1800         | eo.                                     | 1.7                                    |
| 7   | 2 309578 4       |        | ည<br>ရ     | SPP.   | 10.6               | 4<br>4              | 2400         | 1700         | 2.0                                     | -<br>.3                                |
| 64  | 309578<br>309579 |        | 4 4<br>0 0 | SPP.<br>NO PLANTS PRES                             | 14.0<br>ENT        | 6.2                 | 2700<br>2700 | 1900<br>2100 | ۰, -<br>6, 6                            | <br>2.6.                               |
| -   | 1 309600 4       | 498270 | 4.<br>R.   | CHARA SPP.<br>Pot. Gramineus                       | 25.9<br>0.9        | 11.7<br>0.6         | 2900         | 1700         | <b>6</b> 0                              | £.3                                    |
| 7   | 2 309601 4       | 498270 | 4          | CHARA SPP.   | 37.2               | 22.2                | 2700         | 1800         | 1.6                                     | 1.2                                    |
| 6   | 309605           | 498272 | in<br>O    | Z  | 6.19               | <b>80</b> -         | 2700         | 1500         | 1.6                                     | -                                      |

|    | <b>有食品的食物</b> | 计网络科技技术的教育的目标技术 | *******     | ***       |                       |  |   | ****           | ****** |  |               |            |
|----|---------------|-----------------|-------------|-----------|-----------------------|--|---|----------------|--------|--|---------------|------------|
|    | 4             | 4 309603        | 498272      | 0.0       | CHARA<br>POT.<br>POT. | NARROW GRAMINEUS                             | 18.8<br>1.3<br>2.2                      | 2<br>6<br>7. 0 | 2600   |  | 1<br>1<br>1   | . 2<br>. 2 |
| 6  | -             | 309596          | 498271      | 0.6       | CHARA                 |  | . 6. 6                                  | 4.4            |        | ## ## ## ## ## ## ## ## ## ## ## ## ## | *             | 6.0        |
|    | 2             | 2 309596 498274 | 498274 2.5  | 2.5       | CHARA<br>POT.         | CHARA SPP.<br>POT. GRAMINEUS                 | 46 . 60 . 60 . 60 . 60 . 60 . 60 . 60 . | 8.0<br>7.0     | 2600   | #<br>#<br>#                            | 1.2           | 1.2        |
|    | 6             | 3 309598        |             | 2.5       | CHARA                 | CHARA SPP.                                   | 18.2                                    | 10.0           | 2400   | 2100                                   | #<br>#<br>#   | 1.2        |
|    | 4             | 4 309600        | 498274      | 3.0       |                       | SPP.   | 4.0                                     | 5.2            | 2300   |  | 1.4           | 1.1        |
| ō  | -             | 1 309621        | 498285      | وي<br>در  |                       | CHARA SPP.<br>POT. CRISPUS<br>POT. GRAMINEUS | 4.7<br>0.2<br>0.6                       |                |        |  | k<br>11<br>15 |            |
|    | 7             | 2 309625        | 498287 11.5 | 11.5      | CHARA SPP             | SPP.   | 7.5                                     | 4              | 3000   |  | )<br>10<br>10 | 1.1        |
|    | 6             | 3 309624        | 498287      |           | CHARA                 | CHARA SPD.                                   | 23.5                                    |                | 2900   | ##<br>                                 |               |            |
|    | 4             | 4 309624        | 498287      | <b>60</b> |                       | CHARA SPP.<br>POT. GRAMINEUS                 | 11.4<br>4.3                             | 25.2<br>- 89.1 | 3100   |  |               |            |
| == | -             | 1 309611        |             | 2,5       | CHARA                 | Spp.   | 10.7                                    |                |        | 2500                                   | 0.7           | 4.0        |
|    | 7             | 2 309613        | 498279      | 3.0       | 1 1                   | SPP.   |   | 22.6           | 3000   |  |               | 0.0        |
|    | 6             | 3 309613        | 498280      | e.        | i i                   | . ddS  |   | 20.3           |        |  |               | 7.0        |
|    | 4             | 309615          |             | 6.4       | CHARA                 | SPP.   | 97.4                                    | 34.1           | 3100   | 2100                                   | 1.2           | 0.8        |

L-7

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER IS          | BLOCK<br>NO. | ₹ ¦   | COORDI<br>UPPER | A N    | DEPTH<br>(FT.) | MACR                       | w                                 | DRV WEIGHT<br>(G/M2)  | ASH-FREE L<br>WEJGHT<br>(G/M2) | LIGHT(FOOT    | CANDLES)         | CURRENT (F)         | F./SEC.)     |
|-------------------|--------------|-------|-----------------|--------|----------------|----------------------------|-----------------------------------|---|--------------------------------|---------------|------------------|---------------------|--------------|
| ST. CLAIR RUSSELL | -            |       | H 1             | 4      | 0.<br>0.       | POT . K                    | NARROW<br>GRAMINEUS               | ######################################  | 14.2<br>5.1                    | 2800          | 800              | #<br># 150<br># 150 | 0.3          |
|                   |              | , ,   | 309951          | 498655 | 7.0            | POT . N                    | NARROW<br>RICHARDSONI             | 8 CO - 1 | 65.9                           | 3000          | 800              | 2.1                 |              |
|                   |              | e     |                 | 9      | 7.5            | <b>X</b>                   | SPP.<br>NARROW<br>GRAMINEUS       | 12.1<br>15.3<br>23.9  | 9.4<br>0.11<br>0.01            | 2500          | 800              |                     | 0.7          |
|                   |              | 4     | 309954          | 498657 | 7.0            |                            | NARROW<br>RICHARDSONI             | 45.3<br>0.1   | 32.9<br>2.6                    | 3000          | 00 <b>6</b>      | e.                  |              |
|                   | 7            | -     | 309941          | 498653 | 0.6            | 4 1                        | Spp.                              | 79.6  | 39.0                           | 3500          | ÷<br>60+<br>100  | 2.4                 |              |
|                   |              |       | 309943          | 4 1    | 80<br>10       |                            | SPP.                              | 65.0<br>2.7   | 29.8<br>2.2                    | 3700          | <del>1</del> 100 | 2.4                 | e            |
|                   |              | 6     | 3 309944        | 498655 | 0.             | CHARA                      | SPP.                              | 121.6   | 62.6                           | 3400          | 1100             | 2.2                 | 4.0          |
|                   |              | 4     | 309946          | 4      | <b>6</b> 0.    | CHARA<br>POT. N            | , SPP.<br>NARROW<br>GRAMINEUS     | 71.1<br>7.6<br>20.7   | 33.6<br>4.2<br>4.2             | 3200          | 1200             | 2.1                 | 1.2          |
| ٠                 | <b>6</b>     | -     | 309964          | 498660 | 11.0           | A M                        |                                   | 7.7<br>31.4   | 4.8<br>22.8                    | 3300          | <b>8</b> 00      | 2.0                 | 4.0          |
|                   |              |       |                 | 498659 | ÷ .5           | CHARA<br>ELODEA            | SPP.<br>CANADENS                  | 6.3<br>93.5   | . 88<br>. 98<br>. 58           | 3100          | 800              | 2.1                 | в.<br>О      |
|                   |              |       |                 | 9      | 12.0           | CHARA<br>ELODEA            | SPP.<br>CANADENS                  | 8 G<br>1 . G  | 4.6<br>66.2                    | 3000          | 00 <b>6</b>      | 2.0                 | 1.7          |
|                   | ,            | 4     |                 | 498660 | 12.0           | CHARA                      | SPP.<br>CANADENS                  | 24.3<br>87.7  | 13.2<br>59.2                   | 2700          | 700              | e                   | в.<br>О      |
|                   | 4            | -     | 309958          | 498660 | 7.5            | CHARA<br>ELODEA            | SPP.                              | 2.2<br>35.8   | 1.3<br>28.3                    | 3200          | 00 <b>s</b>      | 2.1                 | <b>89</b> .0 |
|                   |              | 7     | 2 309958        | 498659 | 7.5            | CHARA<br>ELODEA<br>Pot. Ri | SPP.<br>A CANADENS<br>RICHARDSONI | 76.1<br>77.9<br>14.3  | 43.8<br>56.2<br>10.9           | 3200          | 006              | 2.0                 | 0.7          |
|                   |              | ო     | 3 309960        | 498659 | o.<br>60       | CHARA<br>ELODEA<br>POT. NA | SPP<br>CANAD<br>ARROW<br>SPICA    | 21.0<br>33.0<br>2.0<br>1.0  | 28.1<br>18.4<br>18.0           | 8<br>00<br>00 | -1<br>00<br>1    | eo<br>-             | £. ÷         |
|                   |              | 1 4 H | 309961          | 498659 | 0.             | CHARA<br>ELODEA<br>POT. R  |                                   | 26 4 8 6 6 8 6 6 8 6 6 8 6 8 6 8 8 6 8  | 80.9<br>2.8                    | 3000          | 1000             | 2.1                 | 0            |

| • |                 |                                       |                  | 1<br>1<br>1     | ELODEA<br>POT. NA<br>POT. R1          | A CANADENS NARROW RICHARDSONI                                  | 5.4<br>20.6<br>38.2           | 30.1<br>30.1                    |      |  |                | # # # # # # # # # # # # # # # # # # # |
|---|-----------------|---------------------------------------|------------------|-----------------|---------------------------------------|--|-------------------------------|---------------------------------|------|--|----------------|---------------------------------------|
| ľ | ဖ               | 309959                                | 498660           | 9.8             | <b>!</b>                              | NARROW<br>RICHARDSONI  | 3.9<br>36.3                   | 3.0<br>28.3                     | 2900 | 1700   | 1              |                                       |
| ស | -               | 309951 4                              | 498660           | 6.5<br>5        | <b>! ₹</b> !                          | SPP.<br>NARROW<br>GRAMINEUS                                    | 35.9<br>19.7<br>4.5           | 18.2<br>16.1<br>3.3             | 2800 | 00<br>6  | 1.7            | 1.3                                   |
| • | 8               | 2 309952 4                            | 498660           | 0.<br>0         | CHARA<br>POT N                        | SPP.   | 110.8                         | 67.4<br>14.9                    | 2800 | 006  | o <del>-</del> | <del>.</del> 0                        |
|   | #<br>#          | 309953                                | 498660           | <b>v</b><br>0   | POT . N                               | NARROW<br>GRAMINEUS  | 58.7                          | 47.4<br>5.6                     | 2800 | 100  | 2.1            | <b>s</b> . O                          |
| - |                 | 309954                                | 498660           | о.<br>О         | * 🤇 🕛                                 | SPP.   | 123.4                         | 70.3<br>20.1                    | 2900 | 1300   | o. –           | 0. <del>-</del>                       |
|   |                 | 309955 4                              | 498659           | 7.0             | CHARA SELODEA POT N.                  | A SPP.<br>EA CANADENS<br>NARROW<br>RICHARDSONI                 | 6.4<br>7.00.7<br>85.88        | 3.0<br>6.0<br>7.4<br>7.0<br>6.0 | 1500 | 00<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10 | 1              | '                                     |
|   |                 | 309935                                | 498659           | 7.5             | P P P P P P P P P P P P P P P P P P P | r I Chardson I<br>Narrow                                       | 93. <del>1</del><br>9. 0      | 70.1<br>7.5                     | 1500 | 1100   | ,              |                                       |
| 9 |                 | 309946                                | 498661           | 5.0             | ≤ !                                   | SPP.   | 33.6                          | 20.8                            | 2700 | 000  | 1.5            | 0.5                                   |
|   | 2               | 2 309947                              | # 4<br># Q       | 0.0             | 4                                     | SPP.   | 46.0                          | 27.3                            | 1900 | 100  | æ.             | 0.3                                   |
|   | # C7            | 3 309947                              | 498662           | 5.0             | CHARA                                 | SPP.   | 29.8                          | 17.8                            | 2500 | -<br>100   | 9.             | 1.5                                   |
|   | R<br>R          | 309949                                | 498664           | 9.<br>0.        | ≴                                     | SPP.   | 31.8                          | 16.7                            | 2800 | 1200   | 1.7            | 0.1                                   |
|   | . –             | 309967                                | 498665           | S. O            | CHARA<br>POT. N                       | SPP.<br>NARROW<br>GRAMINEUS                                    | 98.8<br>9.88.0<br>9.88.0      | 23.6<br>3.0                     | 1700 | 8<br>8   | 4.             | o.5                                   |
|   | 7               | 309968                                | 498665           | 0. <del>4</del> | CHARA<br>POT. N                       | SPP.<br>Narrow   | 117.2<br>2.8                  | 61.6<br>2.4                     | 1800 | 1000   | 1.3            | 4.0                                   |
|   | #<br>#<br># (7) | 309970                                | 498665           | 4.5             | Ž.                                    | SPP.   | 109.4                         | 63.3                            | 1800 | 1100   | 1.2            | 0.3                                   |
|   | #<br>#<br>#     |                                       | 498664           | <b>6</b> .      | CHARA<br>POT . N                      | SPP  | 39.4<br>221.9                 | 18.3<br>175.2                   | 2400 | 1400   | 1.3            | 0.4                                   |
|   | ji.             | 309971                                | 498664<br>498664 | ស<br>ស          | 1 &                                   | SPP.<br>NARROW<br>GRAMINEUS                                    | 47.0<br>30.6<br>25.9          | 19.9<br>23.7<br>18.9            | 3700 | 3300   |                |                                       |
|   |                 | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 498666<br>498666 | ر<br>0          | CHARA<br>ELODEA<br>Pot. N             | CHARA SPP.<br>ELODEA CANADENS<br>POT. NARROW<br>POT. GRAMINEUS | 69.0<br>TRACE<br>37.2<br>28.7 | 22.6<br>28.6<br>21.2            | 3700 | 3300   |                |                                       |
|   |                 | 309958                                | 498665           | 4               | CHARA                                 |  | 79.4                          | 42.5                            | 2400 | 900  | 1.7            |                                       |

L-9

| '   | 2 309960 4 | 309960 4 | 498666        | 0.             | CHARA<br>POT.                                    |  | 102.3                     | 1.6                 | 2300         | 1000                                     | 2.0 |                       |
|-----|------------|----------|---------------|----------------|--|--|---------------------------|---------------------|--------------|--|-----|-----------------------|
|     | 3 309961 4 | 309961 4 | 498665        | <b>4</b><br>0  | CHARA  |  | 106.5                     | 55.6                | 1800         | 1000                                     | 1.9 | 1.7                   |
| '   | 4          | 309963   | 309963 498664 | <b>4</b><br>0  | 200  |  |                           | 20.5<br>155.7       | #<br>H       | 1000                                     | 2.0 | 1.7                   |
| •   | 5 309963 4 | 309963   | 309963 498665 | . 4<br>        | POT. NARROW<br>NITELLA HYALINA<br>POT. GRAMINEUS | #<br>{{<br>}<br>}<br>}   | #<br>60<br>64<br>64<br>75 | 9.1<br>29.7<br>18.3 | 100          | 9 50 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |     | *<br>*<br>*<br>*<br>* |
|     | 6 309964 4 | 309964 4 |               | 5.0            |  |  | 67.9<br>17.8<br>24.0      | 28.3<br>14.5        | 100          |  |     | #<br>#<br># :         |
|     | 1 309951 4 | 309951   |               | 0.4            | CHARA  |  | 25.0                      | 13.4                | 2200         | 1000                                     | 1.5 |                       |
| . ' | 2 309955 4 | 309955 4 |               | B.             | CHARA<br>POT.<br>POT.                            |  | 1.8<br>12.0<br>7.4        | () 60 R<br>60 Ri 4  | 2000<br>2000 | 1000                                     | H O | <b>8</b> 0.0          |
|     | 3 309954 4 | 309954 4 | 498665        | 4<br>0         | : < 1  |  | 5.3<br>87.4<br>15.6       | 67.5<br>8.8<br>8.8  | 2300         |  | 0.7 | 0.2                   |
| •   | 4          | 309956   |               | <b>4</b><br>0. | CHARA SPP.<br>POT. NARROW<br>POT. GRAMINEUS      |  | 0.8<br>127.6<br>7.9       | 0.7<br>98.6<br>5.9  | 2500         | 1300                                     |     | 0.5                   |
| • ' | 5 309951 4 | 309951   | 309951 498668 | 3.             | CHARA  | 10 1<br>10 1<br>12 1<br>15 (<br>16 (<br>16 (<br>16 (<br>16 (<br>16 (<br>16 (<br>16 (<br>16 | 87.6                      | 30.7                | 3700         |  |     |                       |
| •   | 9          | 309951   | 309951 498668 | 4.<br>R.       | CHARA SPP.<br>POT. GRAMINEUS                     |  | 73.5<br>8.1               | 27.1<br>6.1         | 3700         | 3500                                     |     |                       |

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

ISLAND

RIVER

BELLE

DETROIT

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

ASH-FREE LIGHT(FOOT CANDLES) CURRENT(FT./SEC.) SURFACE BOTTOM -0.5 . 0 9. 0.7 0.7 0.7 SURFACE BOTTOM 20 450 20 20 20 8 20 90 20 8 480 480 4 0 0 200 **2**0 3700 200 3700 27.1 0 <del>+</del> 15.0 WE I GHT (G/M2) DRY WEIGHT 30 (G/M2) TRACE TRACE VALLISNERIA AMER RICHARDSONI POT. RICHARDSONI RICHARDSONI RICHARDSONI NITELLA HYALINA ELODEA CANADENS ELODEA CANADENS NITELLA HYALINA POT. GRAMINEUS POT. GRAMINEUS POT GRAMINEUS MACROPHYTE POT. CRISPUS POT. CRISPUS NARROW POT. NARROW POT NARROW POT. NARROW POT. NARROW POT. NARROW CHARA SPP. CHARA SPP. CHARA SPP CHARA SPP CHARA SPP CHARA SPP CHARA SPP POT. POT. P01 POT P01. POT DEPTH 7.0 (FT.) 7.5 9.5 7.5 9 .5 9 5 7.5 . 9 . 13 0.0 312777 499968 10.0 o. 312782 499965 312782 499967 312758 499947 312761 499954 312761 499954 312777 499965 UPPER LOWER 312757 499947 312758 499947 312761 499954 312778 499966 312782 499966 LORAN COORDINATES BLOCK REPLICATE 6 (7) g ~ n

0.5

7.0

2

450

6.0

CHARA SPP

ທ

σ,

312786 499972

| •   |               | 1<br>14<br>11<br>11<br>11 |           | POT. NARROW<br>MYRIO SPICATUM<br>POT. NARROW<br>VALLISNERIA AMER | 0.0<br>2.7<br>4.0              | 0.0<br>0.0<br>0.0<br>0.0 |              |          |         |                |
|-----|---------------|---------------------------|-----------|--|--------------------------------|--------------------------|--------------|----------|---------|----------------|
| •   | 2 312786 49   | 499971                    | හ<br>ව    | NITELLA HYALINA<br>Pot. Narrow<br>Vallisneria amer               | 8.<br>6. 8.<br>4. 8.           | 0-4<br>-00               | 450          | 21       | 0.7     | o.s            |
| (   | 3 312786      | 766                       | ez<br>ro. | CHARA SPP.<br>Pot. Narrow<br>Vallisneria Amer                    | 41.1<br>0.8<br>2.8             | 0.2<br>0.5<br>0.5        |              | . —      | 6.0     | o. sa          |
| ID. | 1 312802      | 499983                    | 7.5       | !!   | 24.2<br>40.0                   | 6.8<br>8.5               | 550          | 25       | 0.8     | 0.7            |
| - ' | 2 312807 49   | 499983                    | 60        | POT. CRISPUS<br>POT. NARROW<br>VALLISNERIA                       | 00 ee<br>1√ re: 6.             | 0 0 4<br>2 . 2<br>1 . 4  | 550          | 52       | M       |                |
|     | 3 312802 49   | 866                       | 0.<br>-   | NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER               | <del>.</del> . 6               | 2.1<br>3.4               | 550          |          | 80.0    |                |
| '   | 1 312809 49   | 499987                    | 0         | NITELLA HYALINA<br>POT. GRAMINEUS<br>VALLISNERIA AMER            | ~ ສ ←<br>ດ ດ ພ                 | 0 H O                    | 380          | 30       | 1.2     |                |
|     | 2 312809 49   | 499987                    | o<br>O    | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW<br>VALLISNERIA AMER  | 0.4<br>6.4.00                  | O @ O O                  | 330          | 33       | 1.2     | <b>6</b> . O   |
| (   | 3 312809 49   | 499985<br>89988           | ດ<br>ທ    |  | ru ← ru ←<br>r- ⊖ ai ai        | + 0 4 +<br>2 2 - 5       | 330          | e<br>e   | 1.2     | <b>s</b> a · O |
|     | 1 312853 49   |                           | 3.5       | CHARA SPP.   | 186.7                          | 83.3                     | 400          | 170      |         | 0.0            |
| •   | 2 312853 49   |                           | 3.0       | CHARA SPP.<br>VALLISNERIA  | 62.6<br>0.6                    | 6.0<br>0.3               | 8            | 170      | 0.1     | 0.0            |
| -   | 3 312853 49   | 499995                    | 6         | NITELLA HVALINA  | 33.1                           | 6.7                      | 4<br>00<br>4 | 170      | 0.1     | 0.0            |
| ·   | 312845 49     |                           | •         | MYRIO. SPICA<br>Nitella Hyal<br>Vallisneria                      | 61.1<br>48.8<br>2.0            | 36.1<br>17.5<br>1.6      | 170          | <b>9</b> | 0.3     | 0.2            |
| •   | 2 312845 49   | 499996                    |           |  | 27.2<br>53.7<br>TRACE<br>TRACE | 17.1<br>21.5             | 170          | 8<br>6   | e.<br>O | 0.2            |
| -   | 3 312845 49   | 499996                    | 7         |  | 47.9<br>19.5<br>0.7            | 27.5<br>6.7<br>0.4       | 170          | ဖ<br>၈   | o. 3    | 0.2            |
|     | 9 1 312837 49 | 499995                    |           | ELODEA CANADENS<br>NITELLA HYALINA                               | TRACE<br>116.8                 | 33.1                     | 8            | 30       | e. 0    | e. o           |

| H C4   | 2 312836   | 499994                                  | 6.5            | CHARA SPP.   | ***************************************   | 55.0                                    | 100 | 30                                    |   |              |
|--|------------|---|----------------|--|---|---|-----|---------------------------------------|---|--------------|
| # CO   | 3 312838   | 499995                                  | # 6.5<br># 8.5 | Ħ  | 166.1                                     | 66.5<br>0.1                             | 100 | 30                                    | 0.3                                     | 0.3          |
| in 4. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. | 4 312835 4 | 1 4 4 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | ម<br>ម         | MYRIO. SPICATUM NITELLA HYALINA POT. RICHARDSONI POT. NARROW           | TRACE<br>28.7<br>11.2<br>8.8              | 6.9<br>2.3<br>2.6<br>3.3                | 1   | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | M CO | . O . T      |
| ស  | 312836     | 499996                                  | 0.0            | NITELLA HYALINA<br>POT. RICHARDSONI<br>POï. NARROW                     | 10.1<br>22.9<br>5.1                       | 2.6<br>17.2<br>2.5                      | 220 | 4 CO                                  |   | 0.7          |
|  | 912836     | 400005                                  | 0.0            | ELODEA CANADENS<br>NITELLA HYALINA<br>POT NARROW<br>VALLISNERIA AMER   | 0 2 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 8 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 220 |                                       | 80<br>80<br>80<br>81                    | 0.7          |
| 7  | 7 312835   | 499995                                  | 0.0<br>0.0     | NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER                     | 27.0<br>19.3<br>1.9                       | 7.1<br>12.1<br>1.4                      | 220 | 80 (0)                                | 60.<br>0                                | M            |
| <b>6</b> 0                                   | 312835     | 499995                                  | 0.0            | NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 8.1.2<br>0.7.7<br>0.00.0                  | 80 - 83<br>6.0<br>7.0<br>8.2            | 220 | æ                                     | <b>8</b> 0<br>O                         | 0.7          |
| <b>്</b>                                     | 9 312839   | 499997                                  | 10.0           | NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 82.3<br>12.8<br>5.0                       | 43.2<br>43.2<br>3.5<br>0.1              | 220 | # 60<br># 60                          | H 60 .                                  | 0.7          |
| -  | 1 312827   | 499992                                  | n<br>R         | 1 - 1  | 49.8<br>0.5<br>1.2                        | 4 O O                                   | 560 | 00 <sub>t</sub>                       | 6. O                                    | <b>8</b> . O |
| 8  | 2 312827   | 499992                                  | ł ·            | • •  | 25<br>3<br>4<br>CE                        | 2.3<br>2.3<br>2.0                       | 560 | <b>6</b>                              | რ<br>O                                  | <b>8</b> . O |
|  | 312827     | 499992                                  | e.<br>9        | NITELLA HYALINA<br>POT. CRISPUS<br>POT. NARROW                         | 8.00<br>8.00<br>8.00<br>8.00              | 17.7<br>0.4<br>2.4                      | 560 | 001                                   | 6.<br>O                                 | 8.0          |

L-13

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

| ( ) E                                 | #  | -                          | 2                                     | 2           | 0                                      | 2       | 2        | 7                         |                        | #<br>#<br># | *<br>*<br>*<br>*       |                                    | 0.0                   |  | 7                                       | # <del>-</del>                          | 1 2 2 6  |
|---------------------------------------|--|----------------------------|---------------------------------------|-------------|--|---------|----------|---------------------------|------------------------|-------------|------------------------|------------------------------------|-----------------------|--|---|---|--|
| (FT./SEC.                             | Ö  | 0.                         | 0.5                                   | 0.5         | o.<br>0                                | 0.2     | 0.5      | 0.2                       | Ö                      | 0.1         | 0                      | Ö                                  | Ö                     | . O  | 0.2                                     | 0.1                                     |  |
| CURRENT (F                            | n 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |                            | # # O . 4                             | 0.3         | . O . S                                | 0.3     | # 4.0    | 0.7                       |                        |             |                        |                                    | 0.0                   |  | M C C C C C C C C C C C C C C C C C C C | 0.4                                     | # 4 C  |
| CANDLES)<br>= # # # # # # BOTTOM      | 1 100 tr                                 | 1300                       | 1500                                  | 1800        | 620                                    | 1200    | 820      | 300                       | 1500                   | 280         | # 00 mm                | 320                                | 430                   | 630<br>630   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 440                                     | 7.40<br>7.40                                   |
| LIGHT(FOOT                            | 3400 H H H H H H H H H H H H H H H H H H | 3400                       | #<br>#<br>#                           | #<br>#<br># | 3500                                   | 3500    | 3500     | 3600                      | 3800                   | 3500        | 3400                   | 4000                               | <del>0</del>          | 1800   | 4 4 4 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 3500                                    | 2700   |
| ASH-FREE L<br>Weight<br>(G/M2)        | 24.3<br>2.6                              | 7.5                        | # # # # # # # # # # # # # # # # # # # | # # O       | 1                                      | 1.71    | 39.5     | 15.3                      | 2.1.5<br>0.4           | 44.1        | 0.                     | 10.8<br>8.8                        | 0.8<br>0.0            | 0.3<br>1.0<br>2.3                                      | 2.8                                     | 55.7<br>3.0                             | ***************************************        |
| DRY WEIGHT (G/M2)                     | TRACE<br>32.6<br>3.6                     | 10.8                       |                                       | 12.2        | ###################################### | 25.8    | 57.6     | 22.9                      | 35.4<br>0.7            | 81.5<br>3.0 | TRACE 54.7             | TRACE 23.2 6.9                     | 3.0<br>16.7           | 1.1<br>1.7<br>3.6                                      | 25.6                                    | 86.6<br>4.0                             | ***************************************        |
|                                       | AMER                                     | AMER                       |                                       |             | SONI                                   |         |          | AMER                      | AMER                   | AMER        | AMER                   | AMER                               | )<br>)<br>)<br>)<br>( | AMER   | AMER                                    | AMER                                    | EI<br>N<br>Dt<br>Di                            |
| MACROPHYTE<br>TAXON                   | CHARA SPP. POT. NARROW                   | POT. NARROW<br>VALLISNERIA | M                                     | N .         |  |         | NARROW   | POT NARROW<br>VALLISNERIA | CHARA SPP. POT. NARROW |             | CHARA SPP. POT. NARROW | CHARA SPP. POT. NARROW VALLISNERIA | A SPP.                | CHARA SPP.<br>CHARA SPP.<br>Pot. Narrow<br>Vallisneria |   | ======================================  | N 30 C 4 2                                     |
| 1                                     | CHARA<br>POT.<br>VALLI                   | POT. NA                    | P01.                                  | P01.        | POT.<br>POT.<br>VALL                   | POT.    | 2        | POT                       | CHARA<br>POT.<br>VALLI | POT.        | CHARA<br>POT.<br>VALLI | CHARA<br>POT.<br>VALLI             | CHARA<br>POT.         | CHARA<br>POT.  | CHARA<br>POT.<br>VALLI                  | POT.                                    | H C  |
| DEPTH<br>(FT.)                        | 6.0                                      | 5.0                        | 6.0                                   |             | <b>6</b> 0.00                          | 0.8     | 7.0      | 7.0                       | 6.0                    | 0.9         | 7.0                    | 7.0                                | 7.0                   | . 0<br>. 9   | 0.9                                     | # 0.9<br># 0.9                          | H (  |
| AN<br>VATES<br>LOWER                  | 500673                                   | 500673                     |                                       | 500672      | 500680                                 | m right | 500673   | 500682                    | 500687                 | 500688      | 314080 500685          | 500685                             | 500692                | 500695   | 500691                                  | 500694                                  | T 200000                                       |
| EPLICATE LORA<br>NO. COORDIA<br>UPPER | 314069                                   | 2 314070 5                 | 314067                                | 314069      | 314064                                 | 314065  | 3 314068 | 314068                    | 314078                 | ¥           | 314080                 | 4 314077                           | 314088                | 314090   | 3 14089                                 | 4 M M M M M M M M M M M M M M M M M M M |  |
| <b>α</b> 1                            | H<br>H                                   | 7                          |                                       | -           | H                                      | 2       | e .      | 4                         | <br>                   | H           | . O                    |                                    | N                     |  | H (5)                                   | H 4                                     | 医多种性性 医二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 |
|                                       | -  |                            |                                       |             | 2                                      |         |          | !                         | 6                      |             |                        |                                    | 4                     |  |   |   | #<br>#<br>#<br># U                             |
| 25 :                                  | ! _                                      |                            |                                       |             |  |         |          |                           |                        |             |                        |                                    |                       |  |   |   |  |
| ISLAND BLOCK<br>NO.                   | DETROIT HENNEPIN                         |                            |                                       |             |  |         |          | ·                         |                        |             |                        |                                    |                       |  |   |   |  |

|                                      | #<br>#<br>#<br>#<br># |          | 10 Bi  | 11<br>12<br>13<br>14<br>14 | POT. NARROW VALLISNERIA AMER                       | 22.5          | 2. 4.<br>0. 4.     |      | 074  | 0.5                                  | N .             |
|--------------------------------------|-----------------------|----------|--------|----------------------------|--|---------------|--------------------|------|------|--------------------------------------|-----------------|
|                                      | ) <u>}</u> 1          | 314073 5 | 500693 | 0.9                        | NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER | <br>8.4.0     | 0.0<br>0.0         | 0066 | 720  | M<br>M<br>M<br>M<br>M<br>M<br>M<br>M | H<br>H<br>H · · |
| )<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 4                     | 314071 5 | 500692 | 7.0                        | CHARA SPP.<br>Pot. Narrow<br>Vallisneria amer      | பை ந<br>நித்த | 1.3<br>3.6<br>2.8  | 3600 | 1500 | 0.7                                  | 0.2             |
| 9                                    | -                     | 314082   | 500700 | o. <b>9</b>                | CHARA SPP.<br>VALLISNERIA AMER                     | 108.4<br>0.4  | 26.3<br>0.3        | 3400 | 1400 | 0.0                                  |                 |
|                                      | 2                     | 2 314083 | 500702 | ro<br>ro                   | NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER | 96.9<br>4.4.3 | 23.1<br>2.6<br>2.4 | 3800 | 1300 | H C H                                | 0 . 2           |
|                                      | 6                     | 3 314084 | 500702 | 3.5                        | NITELLA HYALINA<br>VALLISNERIA AMER                | 43.2<br>4.5   | 12.5               | 3800 | 1400 | 0.2                                  | 0.2             |
|                                      | 4                     | 314090   | 500700 | ις.<br>L                   | NITELLA HYALINA<br>POT. NARROW                     | 20.0<br>45.9  | 4.6<br>23.5        | 3200 | 610  | 0.0                                  | 0.0             |
|                                      | വ                     | 5 314091 | 500701 | 0.9                        | NITELLA HYALINA<br>PUT. NARROW                     | 10.5<br>24.7  | 2.0                | 3100 | 570  | 0.3                                  | 0.5             |
| 1<br>1<br>1                          | ဖ                     | 314091   | 500700 | o.<br>ø                    | NITELLA HYALINA<br>POT. NARROW                     | 69.5<br>14.5  | 16.6<br>10.2       | 3400 | 520  | 9.<br>0                              | 0.2             |
| 7                                    | -                     | 314094   | 500706 | 9.0                        | NITELLA HYALINA<br>POT. NARROW                     | 88.2<br>8.3   | 27.7               | 2400 | 920  | 0.1                                  | 0.1             |
|                                      | 2                     | 2 314095 | 500706 | 6.0                        | CHARA SPP.   | 120.2         | 33.5               | 2400 | 860  | 0.2                                  | 0.4             |
| 1                                    |                       | 3 314096 | 500707 | 9.0                        | NITELLA HYALINA<br>VALLISNERIA AMER                | 74.5<br>TRACE | 17.1               | 2900 | 670  | o.s                                  | e.0             |
| 1<br>!                               | :                     | 1 314077 | 500704 | ر<br>0.                    | POT. NARROW<br>VALLISNERIA AMER                    | 36.7<br>3.8   | 27.2<br>2.8        | 2900 | 1200 | 0.3                                  | 0.2             |
|                                      | 7                     | 2 314078 | 500704 | ō. ō                       | NITELLA HYALINA<br>POT. MARROW<br>VALLISNERIA AMER | 27.8<br>4.5   | 9.6<br>3.4         | 2800 | 1300 | e. o                                 | 0.1             |
|                                      | က                     | 314078   | 500704 | ر<br>0. و                  | POT. NARROW<br>VALLISNERIA AMER                    | 24.4<br>11.9  | 15.8<br>7.6        | 3200 | 760  | 0.0                                  | 0.0             |
|                                      | 4                     | 4 314079 | 500704 | 0.9                        | POT. CRISPUS<br>POT. NARROW                        | 44.8<br>31.9  | 31.4               | 3700 | 940  | 0                                    | 0.1             |
|                                      | ន                     | 5 314082 | 500705 | 9.0<br>0.0                 | MYRIO. SPICATUM                                    | 164.1         | 125.6              | 2800 | 380  | O.5                                  | e. 0            |
|                                      | 9 1                   | 6 314080 | 500707 | 5.0                        | MYRIO. SPICATUM                                    | 79.6          | 1                  | 3100 | 640  | 0.4                                  | 0.0             |
| 7 314081                             | 7                     | 314081   | 500707 | 5.0                        | MYRIO. SPICATUM<br>VALLISNERIA AMER                | 128.8         | 96.5               | 3500 | 2300 | 6.0                                  | 0.2             |

L-15

with the mental wear the second of the second

and the second of the second of

| <b>o</b> | - #<br>#<br>#   | 1 314087 500710                                 | 500710                     | # 57<br># 57        | POT.                   | NARPOW  | 41.5                                | 27.4                | 3500                 | 140               | 0. 1                | 0.1         |
|----------|-----------------|---|----------------------------|---------------------|------------------------|---|-------------------------------------|---------------------|----------------------|-------------------|---------------------|-------------|
|          | 2               | 2 314088 50071                                  | 500711                     | 5.5                 | POT.                   | NARROW  | 37.5                                | 23.2                | 3800                 | 170               |                     | 0.0         |
|          | е               | 314086  | 500709                     | 0.<br>6.            | POT.                   | NARROW  | 33.1                                | 22.1                | 4300                 | 430               | G<br>H<br>H<br>H    |             |
|          | 4               | 4 314086 500713                                 | 5007 13                    | 0.9                 | POT .                  | CRISPUS<br>NARROW                             | 126.2                               | 8 .6<br>8 .6        | 4200                 | 570               |                     | M O O       |
|          | נה              | 5 314088 50                                     | 5007 15                    | o.<br>o             | MYRIO<br>POT.          | J. SPICATUM<br>CRISPUS<br>NARROW              | TRACE<br>130.0<br>10.8              | 103.4<br>8.2        | 3800                 | 190               | o. 3                | . O         |
|          | ဖ               | 6 314089 500714                                 | 500714                     | O. 9                | P0T.                   | CRISPUS<br>Narrow                             | 35.3<br>28.4                        | 27.2<br>19.9        | 4700                 | 490               | 0.0                 | 0.0         |
| ō        | <b>-</b>        | 10 1 314100 500718                              | 500718                     | o. 9                | CHARA<br>POT.          | A SPP.<br>Narrow                              | 6.5<br>7.4.1                        | 2.9<br>40.2         | 4 100                | 160               | 0.2                 | 0.0         |
|          | 5               | 314100 500718                                   | 5007 18                    | 9.9                 | " · i                  | NARROW  | , ,                                 | 18.2                | 4 100                | 510               | 0.0                 | 0.0         |
|          | က               | 3 314101 500719                                 | 5007 19                    | 0.<br>9             | POT.<br>VALLI          | POT. NARROW<br>VALLISNERIA AMER               | 41.5<br>TRACE                       | 29.7                | 3500                 | 1000              | 0.0                 | o · o       |
| Ξ        | -               | 11 1 314088 500715                              | 500715                     | 0.9                 | POT.<br>VALLI          | POT. NARROW<br>VALLISNERIA AMER               | 77.5<br>2.0                         | 53.6<br>1.5         | 4200                 | 009               | 0.0                 | 0.0         |
|          | 2               | 2 314088 500715                                 | 500715                     | 0.<br>9             | POT.<br>VALLI          | POT. NARROW<br>VALLISNERIA AMER               | 40.0                                | 25.8<br>6.5         | 3600                 | 340               | 0.0                 | 0.0         |
|          | ღ               | 3 314090 500718                                 | 500718                     | o.<br>9             | POT.<br>VALLI          | NARROW<br>ISNERIA AMER                        | 36.1<br>6.2                         | 23.5<br>4.2         | 4 100                | 150               | 0.0                 | 0.0         |
| 12       | -               | 314099 500728                                   | 500728                     | 7.0                 | CHARA<br>POT.          | A SPP.<br>Narrow                              | 2.8<br>25.0                         | 0.8<br>17.0         | 3800                 | 1100              | 0.0                 | 0.0         |
|          | 2               | 314099 500728                                   | 500728                     | 7.0                 | CHARA<br>Pot.<br>Valli | CHARA SPP.<br>Pot. Narrow<br>Vallisneria amer | 35.9<br>35.5<br>3.2                 | 3.7<br>24.1.<br>2.3 | 4 100                | 1000              | 0.0                 | 0.0         |
|          | 6               | 314099  | 500728                     | 6.5<br>5            | CHARA<br>Pot.<br>Valli | A SPP.<br>Narrow<br>Isneria amer              | 40.1<br>1.4                         | 0.6<br>25.1<br>0.8  | 4700                 | 1400              | 0.0                 | 0.0         |
| 13       | - 26            | 1 314099 5007<br>2 314100 5007<br>3 314102 5007 | 500732<br>500733<br>500735 | 12.0<br>10.0<br>0.0 |                        | NO PLANTS<br>NO PLANTS<br>NO PLANTS           | S PRESENT<br>S PRESENT<br>S PRESENT |                     | 3800<br>4100<br>4200 | 360<br>340<br>410 | - 0<br>4 .0<br>6 .0 | 000<br>8044 |
| 4        | -               | 1 314109 500739                                 | 500739                     | 0.6                 | P01 .                  | NARROW  | 6.1                                 | 8.0                 | 4 100                | 430               | 0.3                 | 0.0         |
|          | 7               | 314109 500738                                   | 500738                     | O.                  | POT.<br>VALLI          | POT. NARROW<br>VALLISNERIA AMER               | 2.4                                 | 4.0                 | 4500                 | 860               | 0.0                 | 0.1         |
|          | #<br>#<br># (C) | 3 314110 500740                                 | 500740                     |                     | P01.                   | NARROW  | 60.0                                | 0.5                 | 4 100                | 910               | 0.0                 | 0.0         |

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

ISLAND

RIVER

STONY

DETROIT

-

ASH-FREE LIGHT(FOOT CANDLES) CURRENT(FT./SEC.) SURFACE BOTTOM 0.7 0.7 0.7 0.7 0.7 0.0 0 0.0 -0 0.7 0.5 0.7 7.0 0.4 6.0 6.0 ÷. 0.5 0.3 0.0 4.0 ٠. ٥ ٥. <u>.</u> ٠ . SURFACE BOTTOM 850 8 850 850 <del>1</del>288 1200 920 250 800 650 1200 1200 128 1200 1200 **4**000 3500 **\$ 4**000 8 **4**000 4.9 4400 2.3 4400 4 4 8 9 8 <del>6</del> 8 3600 3500 27.7 3600 4000 000 9.7 19.5 4.4 8 8 0.7 7.0 47.4 4.6 9.6 0.5 0. 10.5 16.5 0.7 25. 35 ö Ö (G/M2) WEIGHT DRY WEIGHT 0.0 0.0 0.0 0.0 5.0 6.7 3.7 25.0 3.0 9 18.6 46.0 34.0 25.2 15.4 (G/M2) o TRACE VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER POT. CRISPUS VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER RANUN. LONGIROST VALLISNERIA AMER POT. RICHARDSONI VALLISNERIA AMER VALLISNERIA AMER MYRIG. SPICATUM MYRIO. SPICATUM MYRID. SPICATUM **ELODEA CANADENS ELODEA CANADENS** SPICATUM MYRIO. SPICATUM POT. GRAMINEUS GRAMINEUS 314200 500975 7.5 POT. CRISPUS POT. CRISPUS MACROPHYTE 314225 500980 7.0 POT. NARROW 7.0 POT. NARROW POT . NARROW POT. NARROW NARROW POT. NARROW 314225 500980 8.0 POT. NARROW 7.0 POT. NARROW POT. NARROW 314225 500979 7.5 POT. NARROW POT . NARROW CHARA SPP MYRIO. POT. POT DEPTH (FT.) 6.5 7.0 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 314200 500976 8.0 6.5 6.5 0.9 9 . 5 9 314215 500977 314215 500977 314216 500977 314206 500978 LOWER 314201 500978 314202 500978 314201 500977 314202 500978 314201 500977 314201 500977 COORDINATES LORAN UPPER REPLICATE . **9** n a 6 a N 00 0 BLOCK . ¥ 8 e

| 314194 500974         | 0. 11 00 | <b>⊢ ₹</b> ∦  | 46.3   | · · •                                | 4200         | 420<br>B B B B B B B B B B B B B B B B B B B | 4.0     |                   |
|-----------------------|----------|---|--|--------------------------------------|--------------|--|---------|-------------------|
|                       | H        | ELODEA CAMADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI<br>POT. NARROW   | 0.04<br>0.04<br>0.04                               | 0.0 <del>,</del> 0 w<br>0.0 w æ = +- | 4200<br>4200 | 420  | 0<br>4. | 8.<br>O           |
| 60 1                  |          | 2   | 45.6   | 34.6                                 | 4200         | 420  | 0.4     | 0.2               |
| 0.6                   |          | POT. NARROW<br>VALLISNERIA AMER   | 1.4<br>31.3  | 0.3<br>8.6                           | 3900         | 760  | 4.0     | 0.4               |
| 0.80                  |          | HETERANTHERA DUB  | 0.7  | 0.3<br>12.5                          | 3900         | 760  | 0.4     | 4.0               |
| 0.88 88.0             |          | POT. NARROW VALLISNERIA AMER  | 0.8<br>19.3  | 0.5<br>0.5                           | 3900         | 760  | 4.0     | 0<br>4            |
| 0.4                   | : :      | POT. CRISPUS<br>VALLISNERIA AMER  | 186.2  | 133.4<br>3.4                         | 3900         | 1100   | o.3     | 0.2               |
| <b>4</b>              | . ,      | POT. CRISPUS  | 378.9  | 279.8                                | 3900         | 1100   | o.3     | 0.2               |
| 0.                    | ) (      |   | 7.3<br>26.1  | 5.1<br>20.6                          | 3900         | 1100   | o. 3    | 0.2               |
| <b>4</b><br>0         |          | ELODEA CANADENS<br>HETERANTHERA DUB<br>POT. CRISPUS<br>RANUN. LONGIROST | 40.5<br>3.0<br>223.7<br>2.1                        | -0.1<br>1.4<br>157.9                 | 3000         | 91   | O . 4   | 0.0               |
| ю                     |          | ELODEA CANADENS<br>RANUN. LONGIROST                                     | 166.7<br>402.7                                     | 112.0<br>279.1                       | 3000         | 18   | -<br>-  | 0.1               |
| 0.<br>0               |          | CANA<br>NTHER<br>SPIC<br>RISPU  | 4.<br>0.0.<br>0.0.<br>0.0.<br>0.0.<br>0.0.<br>0.0. | 0.82.4.1.<br>0.82.4.1.0<br>0.83.1.0  | 000<br>8     |  | -<br>0  | <del>-</del><br>0 |
| က<br>က                |          | 1 22 <b>4</b> 1   | 256.2<br>1.7                                       | 211.3<br>1.3                         | 640          | 25   | o. 1    | o. o              |
| 0.4                   |          | POT. CRISPUS  | 70. 1  | 57.4                                 | 640          | 25   | 0.1     | 0.0               |
| 0397 5.0              |          | 1 Til - 1   | 9.0  | 90.4<br>1.0                          | 640          | 25   | 0.1     | 0.0               |
| 3.5                   |          | T. CRI  | 394.2  | 232.8                                | 2500         |  | 0.1     | o.<br>0           |
| 0.4                   |          | POT. CRISPUS  | 282.6  | 213.6                                | 2500         |  | 0. 1    | 0.0               |
| O995 4.0              |          | EA CANADENS RANTHERA DUB CRISPUS  | n t  | 0.5<br>0.6<br>127.5                  | 2500         |  |         | 0.0               |
| 1003 7.0<br>1002 10.0 | ı        | NO PLANTS PRE<br>NO PLANTS PRE  | PRESENT  |                                      | 3500<br>2900 | 1000<br>630                                  | 2.4     | 1.6<br>2.4        |

|       | e              | 314262                 | 501002 10.0     | 10.0 |              | NO PL.                  | NO PLANTS PRESENT | ESENT   |                   | 2900      | 630   | 2.4 2.4     | 2.4                |
|-------|----------------|------------------------|-----------------|------|--------------|-------------------------|-------------------|---|-------------------|-----------|---|-------------|--------------------|
| ***** | ******         | - 计分类分词电子传统电话存储器电话电话电话 |                 | ***  | ***          | ***                     |                   | 化加热的现在分词 医多角性 医多角性 经存款 医多种性 计多数 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性     | ********          |           | 医医红色 医医红色 医   | 化黄硫黄素黄素异类黄黄 | ********           |
| 9     | -              | 314254                 | 501003          | 5.0  | HETER        | RANTHERA                | DUB               | 61.3  | 44.9              | 44.9 4100 | 1700  | 4.4         | 1.2                |
|       |                |                        |                 |      | POT.         | POT. CRISPUS            |                   | 24.4  | 13.9              |           |   |             |                    |
|       | ***            | 医复数医检查性                | 1 师 刊 科 限 师 的 L | ***  | ***          | ****                    |                   | 化植物植物细胞的复数化试验的对抗性的现代分词 计分别分别 计多数分别 化二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 | <b>新加加斯斯斯斯斯斯斯</b> |           | 11 11 12 12 12 14 16 18 18 18 18 18 18 18 18 18 18 18 18 18 |             |                    |
|       | 7              | 314255                 | 501005          | 9    | POT.         | 501005 6.5 POT. CRISPUS |                   | 3.9   | 7<br>9            | 2.8 4100  | 1800  | ٠<br>ئ      | 1.2                |
|       |                |                        |                 |      | POT.         | POT. NARROW             |                   | 3.7   | 2.6               |           |   |             |                    |
|       | ***            |                        |                 | ***  |              | ****                    | ********          | 医眼神经红色神经红色性红色 医多种球球 医多种性神经神经神经神经神经神经神经神经神经神经神经神经神经神经神经神经神经神经神经              | ***               |           |   |             |                    |
|       | 6              | 314254                 | 501003          | 6.5  | <b>PO1</b> . | 501003 6.5 POT. CRISPUS |                   | 4.0   | 7.8               | 3900      | 1700  | 4.4         | o.<br><del>-</del> |
| -     | · <del>-</del> | 314267                 | 501013          | 9    |              | 80 01                   | NO PLANTS PRESENT | ESENT   |                   | 3000      | 500   | 2.6         | ø.<br>-            |
| •     | 7              | 314267                 | 501013          | 9    |              | NO P.                   | NO PLANTS PRESENT | ESENT   |                   | 3000      | 200   | 5.6         | <b>G</b> 9.        |
|       | 9              | 314267                 | 501013          | 0.9  |              | NO PL                   | NO PLANTS PRESENT | ESENT   |                   | 3000      | 100   | 9.8         | <del>.</del>       |
|       |                |                        |                 |      |              |                         |                   |   |                   |           |   |             |                    |

ľ

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA 2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND   | ISLAND | BLOCK<br>NO. | REPL       | ICATE LORA<br>COORDIN<br>UPPER | AN<br>INATES<br>LOWER | DEPTH<br>(FT.) | MAC                                 | MACROPHY TE<br>TAXON                        | DRY WEIGHT<br>(G/M2)           | ASH-FREE WEIGHT (G/M2)  | LIGHT (FDOT      | CANDLES) | CURRENT (F)                            | F./SEC.)      |
|----------------|--------|--------------|------------|--------------------------------|-----------------------|----------------|-------------------------------------|---|--------------------------------|---|------------------|----------|--|---------------|
| ST. CLAIR STAG | 9      | -            | -06        |                                | , , ,                 | 1 1 1          |                                     | NO PLANTS<br>NO PLANTS<br>NO PLANTS         | 888                            |   | 1 1 1            | 1 1 1    |  |               |
|                |        | 0            | - 06       |                                | 1 1 1                 | 1 1 1          |                                     |   |                                |   | t 1 t            | 1 1 1    | 1 1 1                                  | 1 1 1         |
|                |        | Ю.           | - 06       |                                |                       | 1 1 1          |                                     |   |                                |   |                  |          | 00 00 00 00 00 00 00 00 00 00 00 00 00 |               |
|                |        | 4            | 4<br>~ 5 6 | 1 1 1                          | 111                   | 111            |                                     | NO PLANTS<br>NO PLANTS<br>NO PLANTS         | PRESENT<br>PRESENT<br>PRESENT  |   |                  |          |  |               |
|                |        | ın           | -          |                                | 4 1                   | 6.0            | P0T.                                | GRAMINEUS                                   | 32.9                           | 25.1  | 500              | 350      | 1.0                                    | 9.6           |
| •              | •      |              | 6          | 308032                         | 497396                | 6.0            | CHARA<br>POT.                       | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW | 12.0<br>56.2<br>14.2           | 4.14.3  | 200              | 320      | 0.4                                    | 9.0           |
| •              |        |              | е          | 309035                         | 497396                | ស<br>ស         | ARA<br>T                            |   | 0.4<br>33.7<br>103.7           | 0.1<br>27.1<br>86.1   | 500              | 350      | 0. <del>1</del>                        | 9 0           |
|                |        |              | 4          | 308035                         | 497396                | 0.4            | • •                                 | SPP.<br>GRAMINEUS<br>NARROW                 | 7.1<br>2.6<br>5.0              | 0.4<br>0.8  | 900              | 900      |  | 6.            |
| ·              |        |              | ID .       | g 308032 v                     | 497396                | 6.<br>0        | CHARA<br>POT.                       | SPP.<br>GRAMINEUS<br>NARROW                 | 50.2<br>13.1<br>4.4            | ბ.<br>დ. დ.<br>დ. გ.  | 009              | 200      | t. 7                                   | <u>۔</u><br>ن |
|                |        |              | 1          | 309035                         | 497396                | <b>4</b> .     | CHARA<br>POT.                       |   | 42.3<br>10.1                   | ტ<br>. ფ<br>. ფ   | 009              | 200      | 1.7                                    | :             |
|                |        | ဖ            | <b>-</b>   | 309040                         | 497402                | ы<br>О.        | CHARA<br>ELODE/<br>POT. P           | SPP<br>A CANADENS<br>RICHARDSONI<br>NARROW  | 2.24<br>4.4.4<br>4.4.4<br>2.20 | 2.2<br>10.6<br>25.7<br>17.3                                       | 1000<br>1        | 120      | 1                                      | ı             |
|                |        |              | 7          | 309040                         | 497402                | 7.0            | CHARA<br>ELODEA<br>MYRIO.<br>POT. R | SA . HA                                     | 7.8<br>51.6<br>51.1            | 9.00<br>4.00<br>4.00<br>1.00<br>1.00<br>1.00<br>1.00<br>1.00<br>1 | <del>1</del> 000 | 120      | .1                                     | ı             |
|                |        |              | 1 CO       | 3 309040                       | 497402                | 0.0            | ELODEA<br>POT. RI                   | A CANADENS<br>RICHARDSONI                   | 93.3<br>12.0                   | 68.0<br>9.7   | 1000             | 120      |  |               |
|                |        |              | H<br>H 4   | 4 309045 4                     | 497403                | 6.5            | CHARA                               |   | 394.8                          | 121.3   | 1300             | 270      | 9.                                     | 9.0           |

|  | 9.0                  | 0.6                        |                              | 00<br>24<br>06<br>08<br>08<br>1<br>15<br>14  |   | n<br>0<br>0<br>0<br>1<br>1<br>1<br>1          | 06<br>60<br>80<br>80<br>60<br>60<br>81<br>81                        | ()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>( | 0.3                        | e.<br>O  |  | 0.0   | ı   | 0.0             |
|--|----------------------|----------------------------|------------------------------|--|---|---|---|---|----------------------------|--|--|---|---|-----------------|
|  | * <b>(</b> 0         | 1.6                        |                              | n<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H<br>H |   | iii<br>di<br>di<br>di<br>fi<br>fi<br>di<br>di | M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M                 | 100 100 100 100 100 100 100 100 100 100   | 9.0                        | 9·0  | <b>9</b> .0  | 0.0   | 0.0   | 0.0             |
|  | 270                  | 270                        | 280                          | 280  | 280   | 320   | 320   | 320   | 8000                       | 00<br>00<br>00                                   | 008  | 150   | .150  | 150             |
|  | 1300                 | 1300                       | 420                          | 420  | 420   | 670   | 670   | 670   | 00<br>00                   | <u>0</u>   | 000  | 360   | 360   | 360             |
| 5.0<br>16.3  | 59.7<br>25.4<br>5.3  | 22.7                       | 46.0                         | 00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00                       | 97.1<br>25.0<br>4.0                         | 26.0<br>26.6<br>20.0<br>20.0                  | 3.5<br>7.2<br>73.4<br>89.9  | 35.0<br>63.6<br>9.9   | 6.7.3<br>5.9<br>9.35       | . 50<br>66. 45<br>66. 4                          | 40.2<br>2.6<br>38.5                                    | 13.4<br>35.3<br>0.0<br>6.0  | 21.8<br>72.4<br>1.3                                 | 9.7             |
| 6.5<br>20.7  | 173.1<br>34.4<br>6.5 | TRACE 28.9                 | 131.0<br>67.3                | 321.3<br>11.5<br>10.7  | 279.8<br>32.3<br>5.1                        | 23.00<br>23.08<br>25.48                       | 4 . 6<br>4 . 7<br>4 . 6<br>5 . 5<br>6 . 5<br>7 . 6                  | 48.8<br>788.3   | 0.7<br>63.8<br>7.1<br>45.2 | 1.0<br>21.2<br>83.3<br>71.8                      | 56.5<br>3.3<br>47.2                                    | 8. 4. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.                            | 28.6<br>78.7<br>1.8                                 | 12.6            |
| POT. GRAMINEUS<br>POT. NARROW                      | ( ▼                  | CHARA SPP.<br>Pot. Narrow  | CHARA SPP.<br>Pot. Gramineus | . w  | CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow | A SPP.  EA CANAD  GRAMINE  RICHARD  NARROW    | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. NARROW | CHARA SPP.<br>Pot. gramineus<br>Pot. narrow                                     | A S E O O .                | CHARA SPP.<br>ELODEA CANADENS<br>MYRIO. SPICATUM | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI | ELODEA CANADENS<br>POT. CRISPUS<br>POT. RICHARDSONI<br>VALLISNERIA AMER | ELODEA CANADENS<br>POT. CRISPUS<br>POT. ZOSTERIFORM | ELODEA CANADENS |
| #<br>#<br>H<br>H                                   | 9<br>.5              | ھ<br>.ت                    | o.<br>9                      | o . o  | <b>9</b><br><b>9</b>                        | 0.9   | 7.0   | ه<br>ن  | o.e                        | O. 60  | 0.6  | 1.0   | 0   | 11.1            |
| 10<br>10<br>10<br>10<br>10<br>10<br>11<br>11<br>11 | 497403               | 497403                     | 4                            | 4973   | 497398                                      | 497   | 497398  | 497398  | 497404                     | 497404   | 497404   | 497407  | 497407  | 497407          |
| 9<br>8<br>9<br>9<br>0<br>1                         |                      | 309045                     | 1 309037                     | 2 309037   | 309037                                      | 309037  | 309037  | 309037  | 309042                     | 309042   | 309042   | 1 309038  | 309038  | 3 309038        |
| #1<br>#1<br>#2<br>#1<br>#1                         |                      | g                          | -                            | 6  | ი   |   | k i<br>D (  | φ   | -                          | 6  | 6  |   | 8   |                 |
|  |                      | 0<br>0<br>0<br>0<br>0<br>0 | 7                            |  |   |   |   |   | ,<br>,<br>, co             |  |  |   |   |                 |

|    | #<br>#<br>#<br>#<br>1  | 神管壁印象板川的铁印                               | #<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>() | #<br>#<br>#<br>11<br>#                | MYRIO. SPICATUM<br>NITELLA HYALINA<br>POT. CRISPUS | 2.4 50.1 31.8                             | 1.7<br>27.3<br>26.4          |             |       |   |                             |
|----|--|--|---|---------------------------------------|--|---|------------------------------|-------------|-------|---|-----------------------------|
|    | 4  | 4 309039 49                              | 497408  | <b>9</b> .9                           | . m c. c. i  | დ. დ<br>დ. დ<br>• . ი                     | ນ 4<br>ບ . ໝ<br>ພ . ໝ .      | 440         | 150   | 4.0                                     | o.<br>0                     |
|    | រភ   | 309039 49                                | 497408  | ب<br>ت                                | ELODEA<br>MYRIO.<br>POT. CR                        | 0 + 4 4<br>4 4 8 0.                       | 9.3<br>38.6<br>33.6          | 440         | 150   | 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 | 0.0                         |
|    |  | 4 1                                      | 497408  | 0.9                                   | ELODEA CA<br>Pot. Rich                             | 0.7                                       | C 00                         | 4<br>0<br>4 | 150   | . O . 4                                 | 0.0                         |
|    | - 76   | 1 1 1                                    | 111   | 1 1 1                                 |  | S PRESENT<br>S PRESENT<br>S PRESENT       |                              | , , ,       |       | ##                                      | M<br>M<br># ; ; ;<br>M<br>M |
| =  | 作<br>作<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・<br>・ | 309049 49                                | 497413  | 0.7                                   | " F. E. C.   | 7. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. | 5.1<br>105.2<br>5.4          | 1600        | 190   | ٥<br>ت                                  | e. 0                        |
|    | 2  | 2 309049 49                              | 497413  | 7.0                                   |  | ມ ຄ.ປ.<br>ພ.ຕ.ປ.<br>ພ.ສ. 4.4.             | 23.6<br>60.0<br>60.0<br>60.0 | 1600        | 000   |   | . o                         |
|    | 0  | 3 309049 49                              | 497413  | , , , , , , , , , , , , , , , , , , , | ELODEA<br>POT. NA                                  | 7.3                                       | 5.5<br>94.2                  | 1600        | 190   | 0.5                                     | 0.3                         |
|    | 4  | 4 309048 49                              | 497412  | 7.0                                   |  | 2.8<br>59.9<br>131.7                      | 2.0<br>47.3<br>105.3         | 1500        | 180   | O                                       | 0.3                         |
|    | ស  | 309048 49                                | 497412  | 7.0                                   |  | 10.7<br>51.0<br>39.8                      | 8.1.<br>40.7<br>31.1         | 1500        | 180   |   | e. 0                        |
|    | φ  | 6 309048 49                              | 497412  | 7.0                                   | ELODEA CANAD<br>MYRIO. SPICA<br>Pot. Narrow        | 53.7<br>1.4<br>65.6                       | 40.2<br>1.0<br>32.6          | 1500        | 180   | O .51                                   | e. 0                        |
| 12 | -  | 309046                                   | <u> </u>  | 4                                     |  | 82.4<br>0.4<br>TRACE                      | 21.2<br>0.2                  | 770         | 560   | 0.4                                     | 0.0                         |
|    | 2  | 2 309046 49                              | 497412  | 0.4                                   | CHAR<br>POT.                                       | 182.8<br>0.2                              | 44.0<br>0.2                  | 770         | 560   |   | 0.0                         |
|    | 6  | 309046 49                                | 497412  | 4.0                                   | CHARA SPP.   | 82.4                                      |                              | 770         | 560   | 0.1                                     | 0.0                         |
|    | 4  | 4 309046 49                              | 497412  | <b>6</b> 0                            | ELODEA<br>MYRIO.<br>POT. RI                        | 71.3<br>0.2<br>0.14<br>0.0                | 6.2<br>6.3<br>8.9<br>8.5     | 450         | , 220 | 0. 1                                    | 0.0                         |
|    | ,<br>,<br>,<br>,<br>,<br>,   | 10 10 10 10 10 10 10 10 10 10 10 10 10 1 | 497412  | 10.                                   | ELODEA CANADENS                                    | 40.7                                      | 32.3                         | 450         | 220   | 0.4                                     | 0.0                         |

| 309046                | 8 497412              |                  | * 111   | 7.7<br>110.1<br>*********************************  | 89.0<br>15.0               | 450              | 220  | 0.1      | 0.0              |
|-----------------------|-----------------------|------------------|---|--|----------------------------|------------------|------|----------|------------------|
| H<br>H<br>H<br>H<br>H | #<br>#<br>#<br>#<br># | H<br>H<br>H<br>R |   | 5.3<br>11.1  |                            |                  |      |          |                  |
| 309045                | 5 497412              | 0.               | ELODEA CANADENS<br>POT. CRISPUS<br>POT. RICHARDSONI<br>POT. ZOSTERIFORM | 27.1<br>12.9<br>30.4<br>3.3  | 20.8<br>-1.3<br>24.1       | 560              | 150  | 9.0      | 4.0              |
| 8 309045              | 5 497412              | 9.<br>O          | 0   | •  | 15.1<br>24.6<br>15.4       | 560              | 150  | 9. O     | 4.0              |
| 309045                | 5 497412              | O. 6             | ELODEA CANADENS<br>POT. CRISPUS<br>POT. RICHARDSONI<br>POT. ZOSTERIFORM | 33,2<br>3,5<br>4,4<br>12,2   | 22.0<br>3.9<br>3.5         | 560              | 150  | 9 . O    | n O<br>n 4.<br>n |
| 13 1 309067           | 7 497421              | 0.9              | CHARA SPP.  | 265.2  | 60.7                       | 009              | 510  |          | 1.5              |
| 2 309067              | 4 1                   |                  | CHARA SPP.  | 35.4   | 10.5                       | 009              | 510  | 1.5      | 1.5              |
| 309067                | 4                     | 0.<br>9          | CHARA SPP.  | 206.2  | 42.0                       | 009              | 510  |          |                  |
| 4 309066              | 5 497420              | 7.0              | CHARA SPP.<br>POT. NARROW   | 71.6<br>0.5  | 20.5<br>0.4                | 1300             |      | 0.7      | o. 5             |
| 3090606               | 4                     | 7.0              | CHARA SPP.  | 9.771  |                            | 1300             | 490  |          |                  |
| 990606                | 4                     | 7.0              |   | 31.0   | 6.                         | 1300             | 490  | 0.7      |                  |
| 1 309074              | 4 497427              | 9.9              | CHARA SPP. POT. RICHARDSONI   | 19.2   | 4.9<br>0.2                 | 350              | 200  | . 3      | #                |
| 309074                | 49742                 | 1 • 1            | CHARA SPP.<br>POT. GRAMINEUS  | 91.7   | 27.1<br>3.7                | 350              | 200  | 1.3      | -                |
| 309074                | 4 497427              | 9.0              | CHARA SPO<br>POT GRAMINEUS  | 23.2   | 4.7<br>6.2                 | 350              | 200  |          |                  |
| 309075                | 4974                  |                  | CHARA SPP.<br>Pot. Narrow   | 214.2<br>0.6   | 65.1<br>O.5                | 1000             | 450  | 1.5      | <b>8</b>         |
| 2 309075              | 4                     | 3.0              | CHARA SPP.  | 9.40   | 32.4                       | <del>1</del> 000 | 450  | 1.5      | 9.0              |
| 309075                | 5 497428              | 0<br>0.6         | CHARA SPP.<br>POT. GRAMINEUS  | 142.1<br>8.9   | တ္တ<br>မ .၀<br>မ .၀        | 1000             | 450  | 1.5      |                  |
| 30 <b>908</b>         | 1 497436              | 9.0<br>0.        | CHARA SPP. POT. GRAMINEUS POT. NARROW SAGITTARIA SPP.                   | 80.0<br>80.0<br>4.0<br>6.0<br>6.0<br>7.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8 | 8.4<br>1.03<br>1.04<br>1.0 | 100              | 1000 | O<br>4 . | e<br>0           |
| 309081                | 1 497436              | 0.E              | 2 ×   | 125.0<br>62.4<br>TRACE   | 41.8<br>36.4               | 0011             | 1000 | 4.0      | e. 0             |

T

|   |        |        | ***           | 拉拉拉拉的 医甲状腺 医甲状腺 医二甲状腺 医二甲腺 医二甲腺 医二甲腺 医二甲腺 医二甲腺 医二甲腺 医二甲腺 医二甲 | 化二甲基甲基甲甲基甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲 |                     |                          | 经现代证券 医多种性      |     |      |
|---|--------|--------|---------------|--|---|---------------------|--------------------------|-----------------|-----|------|
| φ | 309081 | 497436 | 3.0           | 309081 497436 3.0 CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW  | 37.2<br>40.7<br>1.8                     | 13.4<br>23.6<br>1.4 | 13.4 1100<br>23.6<br>1.4 | 1000            | 4.0 | e. 0 |
| 7 | 309078 | 497434 | 4<br>.0       | 7 309078 497434 4.0 CHARA SPP. 154.7 57.0 1300 1000 0.4 0.4 0.4 0.4  | 154.7<br>6.5                            | 57.0 1300<br>4.7    | 1300                     | 1000            | 0.4 | 4.0  |
|   | 309078 | 497434 | 0.4           | 8 309078 497434 4.0 CHARA SPP. 95.2 29.4 1300 1000 0.4 0.4   | 95.2                                    | 29.4                | 29.4 1300<br>8.5         | <del>0</del> 00 | 4.0 | 0.4  |
|   | 309078 | 497434 | <b>4</b><br>0 | 9 309078 497434 4.0 CHARA SPP. 11.2 3.9 1300 1000 0.4 0.4  | 11.2                                    | 3.9                 | 3.9 1300<br>1.3          | 000<br>0        | 4.0 | 0.4  |

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

Ĺ

| RIVER          | ER ISLAND | BLOCK<br>NO.       | REPLICA<br>NO. | LOR<br>COORD I<br>UPPER | NAN<br>INATES<br>LOWER | DEPTH<br>(FT.)   |   | MACROPHYTE<br>Taxon  | DRY WEIGHT (G/M2)                         | ASH-FREE L<br>Weight<br>(G/M2) | LIGHT (FOOT | CANDLES) | T (F)  | ./SEC.)<br>************************************ |
|----------------|-----------|--------------------|----------------|-------------------------|------------------------|------------------|---|--|---|--------------------------------|-------------|----------|--|---|
| ST. CLAIR FAWN | FAWN      |                    | -              | 309576                  | 49825                  | <b>o</b> .       | ĭ∢Ž                                     | SPP.<br>A CANADENS<br>NARROW   | 1.5<br>0.7<br>170.5                       | 0.4<br>0.4<br>141.3            |             | 099      | H<br>W<br>W<br>W<br>W<br>W<br>W<br>W<br>W<br>W | 0.2   |
|                |           |                    | 2              | 2 309576                | . 4                    | 10.5             | •                                       | ZOSTERIFORM<br>Narrow  | 1 .8<br>1 .57 .51                         | 44.5                           | 4 100       | 999      | 8.0  | # ·   |
|                |           |                    |                | 309576                  | 49825                  |                  | POT. N                                  | NARROW   | 167.6                                     | 132.3                          | 4 100       | 099      | 0.8  | 0.2   |
|                |           |                    |                | 309568                  | 498252                 | o.               |   | ARDS   | 4 88 4<br>2 5 4 6<br>2 5 5 6<br>2 6 7 7 8 | 1.3<br>40.4<br>27.7<br>7.5     | 3400        | 200      |  | 0.2   |
|                |           |                    | ហ              | 309568                  | 498252                 | <del>0</del> .0  | ELODEA<br>POT. GR<br>POT. RI<br>POT. NA | ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW | 0.0<br>0.0<br>0.0<br>3.0<br>3.0           | 4.0<br>7.00<br>8.00            | 3400        | 1500     |  |   |
|                | •         | #<br>#<br>#<br>\$1 |                | 309568                  | 498252                 | <b>10</b> .0     |   | SPP.<br>GRAMINEUS<br>RICHARDSONI<br>NARROW                           | 24.7<br>6.0<br>71.9                       | മ4 സ<br>റെ മ ഗ്ര<br>റെ ജയ് ര   | 3400        | 1500     |  |   |
|                |           | N                  | - 1            | 309578                  | 498255                 | · ·              |   | SON  | 178.2<br>9.9                              | 143.7                          | 3900        | 120      | 0.5  |   |
|                |           |                    | P              | 309578                  | 4982                   | œ .              | CHARA<br>POT. GR                        | A SPP.<br>GRAMINEUS<br>RICHARDSONI                                   | 4.0<br>48.1<br>105.8                      |                                | 3900        | 120      | O<br>.u  |   |
|                |           |                    |                | 309578                  | 498255                 |                  | • • •                                   | SPP.<br>GRAMINEUS<br>RICHARDSONI<br>NARROW                           | 0.8<br>6.1<br>1.9                         | 0.7<br>2.12<br>8.8             | 3900        | 120      | o .s   | 0.2   |
|                |           |                    | , t            |                         | 498254                 |                  | 1 <b>4</b> 1                            | A SPP.<br>GRAMINEUS<br>GRAMINEUS<br>RICHARDSONI<br>NARROW            | 39<br>26.0<br>30.3<br>30.1                | 15.8<br>19.8<br>13.4<br>24.5   | 3200        | <u>8</u> | † . 2  | 0.0   |
|                |           |                    |                | 309570                  | 498254                 | . <del>.</del> . |   | י סע   | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8     | 28.5<br>65.1<br>39.6           | 3200        | 000      |  |   |
|                |           |                    | ဖ              | 309570                  | 498254                 | 6.2              | CHARA<br>POT. GR                        | CHARA SPP.<br>Pot. gramineus<br>Pot. Narrow                          | 13.9<br>62.7<br>33.6                      | 4.9<br>48.5<br>27.3            | 3200        | 000      | 1.2  | o · o   |
|                |           | ၉                  | -              | 309586                  | 498259                 | 7.5              | ELODEA<br>MYRIO.<br>POT. RJ             | A CANADENS<br>). SPICATUM<br>RICHARDSONI                             | 4.01<br>95.2<br>1.3                       | 7.9<br>4.2<br>79.3             | 8           | 000      | 4.0  | 0.2   |

| 7             | 1 1                                     | o i    | 12.0           |                               | A CANADENS<br>RICHARDSONI                        | 1.0<br>55.6                   | 0.6                         | 3700 | 1000 | 4.0                                   | 0.2            |
|---------------|---|--------|----------------|-------------------------------|--|-------------------------------|-----------------------------|------|------|---------------------------------------|----------------|
|               | 309586                                  | 498259 | 12.0           | ELODEA<br>POT. R              | EA CANADENS<br>RICHARDSONI                       | 9.7                           | 6.7                         | 3700 | 1000 | 0.4                                   | 0.2            |
| i             | ı .                                     | 498262 | 0.4            | CHARA<br>POT.<br>POT.         | SPP.<br>ZOSTERIFORM<br>NARROW                    | 108.2<br>18.8<br>26.3         | 40.9<br>14.4<br>20.6        | 3500 | 2700 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | რ.<br>0        |
| 8             | 309579                                  | 498262 | <b>4</b><br>0. | CHARA<br>POT.<br>POT.<br>POT. | UWNZ   | œ & - ○ 4<br>œ - ○ 4 ○        | 3.7<br>0.8<br>0.3<br>4.53.4 | 3500 | 2700 | 80<br>O                               | о              |
|               | 309579                                  | 498262 | 0.4            | CHARA<br>POT.<br>POT.         | SPP.<br>ZOS FERIFORM<br>NARROW                   | 247.0<br>0.6<br>18.1          | 86.9<br>0.3<br>15.1         | 3500 | 2700 | # 60<br>60<br>7                       | 6.0            |
| - 26          | 1 1 1                                   | 1 1 1  | ,              |                               | NO PLANTS<br>NO PLANTS<br>NO PLANTS              | PRESENT<br>Present<br>Present | ##                          |      |      |                                       |                |
|               | !<br>!                                  | 498270 | . e            | CHARA<br>POT.<br>POT.<br>POT. | SPP.<br>GRAMINE<br>ZOSTERI<br>NARROW             | 64.7<br>34.5<br>TRACE<br>13.7 | 19.3<br>24.1<br>11.2        | 2800 | 270  | 4.0                                   | 0.5            |
| 2             | ; ;                                     | 498270 | 0.4            |                               | SPP.<br>GRAMINEUS<br>NARROW                      | 165.8<br>22.2<br>27.6         | 46.9<br>24.2<br>22.7        | 2800 |      | 4.0                                   | 0.5            |
| 6             | 309606                                  | 49827  |                |                               | GRAMINEUS<br>NARROW                              | 53.0<br>50.4                  | 46.4                        | 2800 | 270  | 4.0                                   | 0.2            |
|               |   | 49826  |                | ELODEA<br>Pot. R<br>Pot. N    | CANADEN<br>ICHARDSU<br>ARROW                     | 11.9<br>37.7<br>61.9          | 9.0                         | 3600 | 1600 | 0.2                                   |                |
| H 1           |   | 498266 | 12.0           | CHARA<br>POT.                 | SPP.<br>RICHARDS<br>NARROW                       | 17.7<br>45.5<br>54.7          | 35.8                        | 3600 | 1600 | 0.2                                   |                |
| ဖ             | i i                                     | 498266 | ÷<br>• . 5     | ELODEA<br>POT. G<br>POT. R    | A CANADENS<br>GRAMINEUS<br>RICHARDSONI<br>NARROW | - 400<br>- 4.00<br>8.4.4.     | 8.3<br>3.2<br>53.1<br>72.6  | 3600 | 1600 |                                       | 0.2            |
| )<br>11<br>11 | 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | 498270 | H C            | CHARA<br>POT .<br>POT .       | SPP.<br>CRISPUS<br>GRAMINEUS<br>NARROW           | 203.4<br>41.2<br>7.8<br>29.2  |                             | 2500 | 2200 | რ.<br>0                               | 0              |
| 1<br>0<br>1   | 309584                                  | 498270 | 3.0<br>0.0     | CHARA<br>POT.<br>POT.         |  | 176.3<br>6.3<br>20.2<br>3.7   | 53.6<br>4.3<br>16.6<br>2.8  | 2500 | 2200 | ල .<br>ර                              | <del>-</del> . |

| R<br>B<br>H<br>H | e                              | 3 309584 4 | 498270 | 2.5        | CHAR<br>POT.<br>POT.                   | A SPD. GRAMINEUS RICHARDSONI  | 186.2<br>12.4<br>1.3  | 55.4<br>9.0<br>-0.0           | 2500 | 2200 |        | 0.1        |
|------------------|--------------------------------|------------|--------|------------|--|---|---|-------------------------------|------|------|--------|------------|
| <b>6</b> 0       | - 1                            | 309608     | 498273 | 10.0       | CHARA<br>POT.                          | A SPP.<br>RICHARDSONI   | 10.4<br>36.0  | 6.1<br>28.6                   | 2600 | 1300 | 0.1    | 0.1        |
| ·                | 2                              | 2 309608 4 | 498273 | ه<br>تن    | CHARA<br>POT.<br>POT.                  | A SPP.<br>RICHARDSONI<br>NARROW   | 64.8<br>5.2   | 50.9<br>3.7                   | 2600 | 1300 | 0.4    | 0. 1       |
|                  | က                              | 309608     | 498273 | 7.0        | P0T.                                   | RICHARDSONI<br>NARROW   | 25.4<br>16.9  | 20.3<br>12.5                  | 2600 | 1300 | 0.4    | o          |
| o o              | -                              | 309603     | 498277 | 2.5        | CHARA<br>POT.<br>VALLI                 | CHARA SPP.<br>POT. RICHARDSONI<br>VALLISNERIA AMER                              | 164.4<br>32.1<br>0.2  | 47.9<br>20.9<br>0.1           | 2300 | 2100 |        | 6.         |
|                  | 7                              | 2 309603 4 | 498277 | 2.5        | CHARA<br>POT.<br>POT.                  | A SPP.<br>RICHARDSONI<br>NARROW   | 179.1<br>4.2<br>0.5   | 9.7.0<br>8.9.8<br>4.0         | 2300 | 2100 | 6.0    | <b>о</b> . |
| ·                | 6                              | 309603     | 498277 | 2.5        | CHARA<br>POT.                          | A SPP.<br>RICHARDSONI   | 65.9<br>98.0  | 20.2<br>74.6                  | 2300 | 2100 | 6. O   | <b>б</b> . |
|                  | 4                              | 4 309599   | 498274 | 3.0        | CHARA                                  |   | 149.8   | 49.2                          | 3800 | 3000 |        | 0.4        |
|                  | 2                              | 5 309599   | 498274 | 2.5        | CHARA                                  | A SPP.  | 72.5  | 23.6                          | 3800 | 3000 | 9.0    | 0.4        |
|                  | 9                              | 6 309599   | 498274 | 9. T       | CHARA<br>POT.                          | A SPP.<br>RICHARDSONI   | 139.3<br>0.7  | 37.8<br>0.5                   | 3800 | 3000 | 9.0    | 4.0        |
|                  | <br>                           |            | 498284 | 7.0        | CHARA<br>POT.<br>POT.<br>VALLI         | CHARA SPP.<br>POT. GRISPUS<br>POT. GRAMINEUS<br>POT. NARROW<br>VALLISNERIA AMER | 80<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0 | 29.2<br>4.0.3<br>1.0.0<br>8.0 | 2200 | 1500 | 0<br>4 | 0.2        |
|                  | 2                              | 2 309620   | 498284 | 6.<br>80   | CHARA<br>POT.                          | A SPP.<br>GRAMINEUS<br>NARROW   | 80.1<br>5.5<br>8.0  | 24<br>0.0<br>0.4              | 2200 | 1500 | 0<br>4 | 0.2        |
| 1                |                                | 309620     | 498284 | 5.0        | CHARA<br>POT.                          | A SPP.<br>GRAMINEUS   | 158.5<br>2.4  | 50.0<br>6                     | 2200 | 1500 | 4.0    | 0.2        |
|                  | N<br>H<br>H<br>H <del>V-</del> | 309619     | 498285 |            | CHARA<br>POT.                          |   | 15.7<br>59.0<br>72.2  | 4.7<br>43.7<br>57.9           | 310  | 230  | 0<br>4 | 0.0        |
|                  |                                | 309619     | 498285 | 3.5<br>3.5 | CHARA<br>POT.<br>POT.<br>POT.<br>SAGIT |   | 3.2<br>62.5<br>1.3<br>3.1.0                                     | 35.6<br>49.4<br>0.9<br>2.3    | 310  | 230  | 4.     | 0.0        |
|                  |                                | 3 309619   | 498285 |            | POT.                                   | GRAMINEUS<br>RICHARDSONI<br>NARROW  | 124.8   | 83.1<br>79.7<br>0.7           | 310  | 230  | 4.0    | 0.0        |

| 4                                | 309612 498281 3.0 CHARA SPP.<br>PDT. RICHAI | 498281 | 9.<br>O                    | CHARA<br>POT. F                         | CHARA SPP.<br>POT. RICHARDSONI                | 381.1<br>1.0 | 101.2 1500 1000 0.7                    | 1500   | 0001    | <b>9</b> .0 | Ø. 0 |
|----------------------------------|---|--------|----------------------------|---|---|--------------|--|--------|---------|-------------|------|
| 67<br>61<br>61<br>63<br>64<br>64 | ***************************************     |        | #<br>#<br>#<br>#           | *************************************** | <b>机物物物物物物物物物物物物物物物物物物物物物物物物物物物物物物物物物物物物</b>  |              |  |        | ******* |             |      |
| ហ                                | 5 309612 498281 3.0 CHARA SPP.              | 498281 | 3.0                        | CHARA                                   | SPP.  | 8.66         | 34.0 1500 1000                         | 1500   | 0001    | 4.0         | 0.3  |
| N                                | " 解 养 你 非 种 解 门 网                           |        | 11<br>11<br>11<br>11<br>11 | ***                                     | 机加热器 化多甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 |              | 11 11 11 11 11 11 11 11 11 11 11 11 11 | ****** |         |             |      |
| 9                                | 6 309612 498281 3.0 CHARA SPP.              | 498281 | 3.0                        | CHARA                                   | SPP.  | 432.6        | 194.4 1500 1000                        | 1500   | 000     | 4           | C    |

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

| RIVER ISLAND      | ISLAND  | BLOCK<br>NO.               | REPLICATE<br>NO. | COORD UPPER                | RAN<br>INATES<br>LOWER     | DEPTH<br>(FT.)               | MACROPHYTE<br>TAXON                                     |   | DRY WEIGHT<br>(G/M2)                        | ASH-FREE L<br>WEIGHT<br>(G/M2)   | LIGHT (FOOT  | T CANDLES) | CURRENT(F1     | r./SEC.)                                     |
|-------------------|---------|----------------------------|------------------|----------------------------|----------------------------|------------------------------|---|---|---|--|--|------------|----------------|--|
| ST. CLAIR RUSSELL | RUSSELL | <del>-</del>               | - 1              | 309943                     | 498653                     | ဝ<br>၈                       | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW             | INEUS                                       | H H H H H H H H H H H H H H H H H H H       | 26.3<br>26.3<br>26.3   | 4300   | 2500       |                | 66<br>66<br>60<br>60<br>60<br>60<br>61<br>61 |
|                   |         |                            | 6 #              | 309943                     | 498653                     | o<br>o                       | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW             | NEUS  | 29.2<br>18.3<br>9.0                         | 14.4<br>1.2  | 4300   | 2500       |                | # # # # # # # # # # # # # # # # # # #        |
|                   |         | 10<br>64<br>64<br>64<br>64 | ල :              | 309943                     | 498653                     | O<br>6                       | _ <b>~</b> & & Z  | RA DUB<br>INEUS                             | 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5     | 14.3<br>1.0<br>32.7<br>18.0  | 4300   | 2500       |                |  |
|                   |         | 6 to                       | - 26 I           | 309975<br>309975<br>309975 | 498660<br>498660<br>498660 | 6.00<br>0.00<br>0.00<br>0.00 | 222   | PLANTS<br>PLANTS<br>PLANTS                  | PRESENT<br>PRESENT<br>PRESENT               | ## ## ## ## ## ## ## ## ## ## ## ## ##   |  |            |                |  |
|                   |         | (C)                        | + ae             | 1                          | 444                        | 0.81<br>0.81<br>0.0          | 2 2 2   | PLANTS<br>PLANTS<br>PLANTS                  | PRESENT<br>PRESENT<br>PRESENT               | =<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N<br>N | 90<br>00<br>00<br>01<br>01<br>11<br>12<br>13<br>14<br>14<br>15<br>16<br>16<br>16<br>16<br>16<br>16<br>16<br>16<br>16<br>16<br>16<br>16<br>16 |            |                |  |
|                   |         | 4                          | -                | 309956                     | 4 1                        | o. 9                         | CHARA SPP.<br>ELODEA CANA<br>POT. RICHAR<br>POT. NARROW |   | 0.7<br>1.0<br>52.9                          | 0.2<br>0.7<br>0.7<br>37.4  | 3000   | 1100       | 2.0            | 0.0  |
|                   |         |                            | ,                | 309956                     | 498659                     |                              | . 4 m   | SPP,<br>A CANADENS<br>RICHARDSONI<br>NARROW | 0,3<br>15.1<br>27.2<br>34.1                 | 0.0<br>10.0<br>21.1<br>27.8  | 3000   | 1100       | 2.0            | # O . O                                      |
|                   |         |                            | N #              | 309956                     | 498659                     | 7.0                          | CHARA SPP. ELODEA CANADENS POT. RICHARDSON              | SPP. SPP. SPRICHARDSONI                     | 8 4 . 6 8 8 . 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 6.4.1<br>0.38<br>0.38  | 3000   | 1100       | 2.0            | 0.0  |
|                   |         |                            |                  | ı                          | 498661                     | ō.<br>0.                     | EA<br>RI  | CANADENS<br>SPICATUM<br>CHARDSONI           | 112.3<br>1.3<br>53.5                        | 69.1<br>0.9<br>39.7  | 3800   | 1100       |                | H O O  |
|                   |         |                            | 10 H             | 309966                     | 49                         | 11.0                         | ELODEA CANADEN<br>POT. GRAMINEUS                        | CANADENS                                    | 151 H                                       | 100.2  | 3800   | 1100       |                |  |
|                   |         | #<br>#<br>#<br>#           | 9                | Ħ                          | 498661                     | 12.0                         | ELODEA CAN  | A CANADENS                                  | 192.6                                       | 130.7  | 3800   | 1100       | 0.7            | 0.0  |
|                   |         | เก                         | - !              | 309950                     | 498657                     | 7.0                          | POT. RICHAR<br>POT. NARROW                              | RICHARDSONI<br>NARROW                       | 41.8  | 30.8   | 3100   | 2100       |                | 0.0  |
|                   |         |                            | 11               | 309950                     | 498                        | 7.0                          | POT. RICHAR<br>POT. NARROW                              | RICHARDSONI<br>NARROW                       | 55.9<br>29.6                                | 24.1   | 3100   | 1100       | <del>-</del> - | 0.0  |
|                   |         |                            | 6                | 309950                     | 498                        | 7.0                          | Z A   | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1   | 8.0   | 0.2  | 3100   | 1100       |                | 0.0  |

|                  | 41<br>11<br>11<br>14<br>14       |                            | 4<br>4<br>6<br>10<br>10                   | H<br>H<br>H         | POT.<br>POT.   | POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW                                  | 16.3<br>104.5<br>79.9               | 12.6<br>74.5<br>59.6            |                  |               |                        |          |
|------------------|----------------------------------|----------------------------|---|---------------------|--|--|-------------------------------------|---------------------------------|------------------|---------------|------------------------|----------|
|                  | 4                                | 309950 4                   | 498660                                    | 5.0                 | CHARA  | CHARA SPP.   | 224.8                               | 70.7                            | 3400             | 2400          | <b>-</b> -             | 6.0      |
|                  | ; ;                              | 309950                     |   | 9.0                 | CHARA SPP  | SPP.   | 116.0                               | 43.4                            | 3400             | 2400          |                        | 0.9      |
|                  | 9                                | 309950                     | 498660                                    | S. 5                | CHARA<br>POT.  | CHARA SPP.   | 167.1                               | 60.0<br>3.3                     | 3400             | 2400          |                        | 6. O     |
|                  | -                                | 309945                     | 498659                                    | O:                  | CHARA<br>POT.  | CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow  | 95.9<br>27.0<br>13.4                | 30.4<br>18.8<br>10.9            | 4200             | 2400          | 4.0                    | 0.0      |
|                  | 2                                |                            | 498659                                    | <b>8</b> 0          | CHARA<br>POT.  | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW  | 58.6<br>12.8<br>13.2                | e e c<br>e c<br>e c c           | 4200             | 2400          | <b>0</b><br><b>4</b> . | o.<br>o  |
|                  | m                                | 309945                     | 8   | 1 -                 | CHARA<br>POT.<br>POT.  | SPP.<br>GRAMINEUS<br>NARROW  | 24 - O<br>80 - 4 - O<br>80 - 80     | 4.00<br>6.00                    | 4200             | 2400          | 0<br>4.                | o<br>0   |
| 1<br>A<br>N<br>N |                                  | . C                        | 498664                                    | 0<br>8              | ELODE<br>POT.<br>POT.  | ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW                                 | 45.4<br>4.4<br>33.3                 | 10.4<br>1.2<br>26.5             | 1800             | 01.4          | 0.7                    | o<br>o   |
|                  | 7                                | 309976                     | 498664                                    | 7.0                 | CHARA<br>ELODE/<br>POT.  | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW                   | 75.9<br>12.2<br>7.6<br>25.8         | 36.2<br>8.8<br>6.2<br>20.0      | 1800             | 4 10          | 0.7                    | o.<br>o  |
|                  |                                  | <b>R</b> (                 | 498664                                    | O.<br>66            | CHARA<br>ELODE/<br>POT.<br>POT.                                  | CHARA SPP.<br>ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW | 28<br>04802<br>0.4802<br>0.08048    | 7.7<br>38.6<br>4.6<br>16.1      | 008 <del>1</del> | <b>4</b><br>0 | 0.7                    | o.<br>0  |
|                  | n<br>H                           | 309978                     | 4   | 3.5                 | CHARA SPP  | SPP.   | 62.4                                | 21.3                            | 3700             | 3000          | 8.<br>0                | 0.7      |
|                  | Ħ                                | 309978                     | H 4                                       | 3.0                 | CHARA  |  | 123.4                               | 36.2                            | 3700             | 3000          | o.8                    | 0.7      |
|                  | r<br>H                           | 309978                     |   | 3.5                 | CHARA SPP  |  | 42.0                                | 17.5                            | 3700             | 3000          | <b>8</b> 9 · O         | 0.7      |
|                  | <b>:</b>                         | H                          | 498665                                    | တ<br>အ              | CHARA<br>ELODE/<br>POT.<br>POT.                                  | CHARA SPP.<br>ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW | 13.0<br>13.0<br>8.7<br>22.4<br>7.88 | 0.0<br>4.0<br>5.4<br>7.0<br>7.7 | 3000             | 230           | <b>9</b> .             | o<br>o   |
|                  | Ü                                | 309060<br>309060<br>309060 | 4 9 9 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | <b>4</b><br>0       | ELODE<br>POT.<br>POT.  | ELODEA CANAOENS<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW               | 38.0<br>56.6<br>3.3<br>17.0         | 25.2<br>4.04<br>2.24<br>2.2     | 2000             | 230           | 9<br>O                 | o.<br>o  |
|                  | 11<br>12<br>14<br>17<br>17<br>17 | 7 69660C                   | и<br>в 4<br>0 8 6 6 8<br>и 6 6 6 5 и      | ii O<br>ii ur<br>ii | CHARA<br>ELODE/<br>POT. (POT. POT. POT. POT. POT. POT. POT. POT. | CHARA SPP.<br>ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. RICHARDSONI                | 2.2<br>76.9<br>76.0<br>19.0         | 57.6<br>8.7.6<br>8.7.6<br>90.9  | 7000<br>7000     | 230           | ဖ<br>ဝ                 | o.<br>o. |

| 4              | 309967   | 4            | <b>4</b><br>0. | CHARA SPP<br>POT. GRAM | CHARA SPP.<br>Pot. GRAMINEUS                | 228.7                 | 69.9<br>0.1          | 3200      | 2800            | 0.0            | 0.0          |
|----------------|----------|--------------|----------------|------------------------|---|-----------------------|----------------------|-----------|-----------------|----------------|--------------|
| 8              | 309967   |              | 0.4            | CHARA SPP.             | 198664 4.0 CHARA SPP.                       | 516.2                 | 139.5                | 3200      | 139.5 3200 2800 | 0.0            | 0.0          |
| 9              | 6 309967 |              | <b>4</b><br>0. |                        | SPP.  | 573.0                 | 137.5                |           | 2800            | 0.0            | 0.0          |
| -              | 1 309955 |              | ი<br>ზ.        |                        | POT. GRAMINEUS<br>POT. NARROW               | 42.2<br>40.4          | 31.3<br>31.9         | 2500      | 250             | 4.0            | 0.4          |
| 6              | 2 309955 | 1 <b>4</b> 1 | 4<br>O.        | CHARA<br>POT.          | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW | 59.7<br>64.4<br>119.1 | 17.7<br>40.6<br>80.4 | 2500      | 250             | 4.0            | 0.4          |
| 6              | 3 309955 | . 4          | 9.0            | CHARA<br>POT.          | CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow | 60.4<br>47.0<br>60.2  | 20.8<br>35.3<br>50.0 | 2500      | 250             | 4.0            | o. +         |
| 4              | 4 309954 |              | <b>4</b> .0    | CHARA<br>POT.          | CHARA SPP.<br>Pot. Gramineus                | 120.8<br>5.9          | 36.8<br>4.2          | 3400      | 3200            | 0 <del>-</del> | <b>s</b> . O |
| rs<br>S        | 5 309954 |              | 4.0            | CHARA<br>Pot.          | 198663 4.0 CHARA SPP.<br>POT. GRAMINEUS     | 195.5<br>1.2          | 55.<br>0.6           | 3400      | 3200            | 1.0            |              |
| #<br>#<br># 49 | 6 309954 | 498663       | 0.4            | CHARA                  | 4.0 CHARA SPP.                              | 214.3                 | 67.7                 | 67.7 3400 | 3200            | 0.1            | <b>8</b> 0.0 |

L - 31

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

| RIVER ISLAND | ISLAND | BLOCK R<br>NO. | W #  | »                                   | LORAN COORDINATES IPPER LOWER | DEPTH<br>(FT.) | E E  | MACROPHYTE<br>TAXON   | DRY WEIGHT (G/M2)                     | ASH-FREE L<br>WEIGHT<br>(G/M2)  | LIGHT (FOOT<br>SURFACE    |                       | CURRENT(FT         | . · ⊪ 20 !  |
|--------------|--------|----------------|------|-------------------------------------|-------------------------------|----------------|--|---|---------------------------------------|---|---------------------------|-----------------------|--------------------|-------------|
| DETROIT      | BELLE  |                |      | 312758 49                           | _                             | 0.6            | POT. P                                       | RICHARDSONI<br>ZOSTERIFORM  | 117.6<br>TRACE                        | 91.1  | 4500                      | 220                   | . O                | 0.1         |
|              |        |                | 7    | 2 312758 48                         | 312758 499951                 | 0.6            | H • (  | RICHARDSONI   | 173.2                                 | 135.0   | 4500                      | 220                   | 0.0                | 0.0         |
|              |        |                | e    | 312758 49                           |                               | 0 6            | )  <br>  •                                   | RICHARDSONI   | 52.7                                  | 6.60  | 4500                      | 220                   | 0.5                | <b>0</b> .4 |
|              |        |                | 4    |                                     |                               | 7.5            | CHARA<br>NAJAS<br>POT. F                     | SEIS  | 21.3<br>3.2<br>0.6<br>11.0            | 7.5<br>0.3<br>7.7   | 3800                      | 650                   | 9.0                | 9           |
|              |        |                | ណ    | 312760 49                           | 499953                        | 7.5            | CHARA<br>NAJAS<br>VALLI                      | CHARA SPP. NAJAS FLEXILIS   | 49.9<br>0.6<br>20.9                   | 13.0<br>0.3<br>14.8   | 3800                      | 650                   | 9.0                | 9.0         |
|              |        |                | 1    | <b>)</b>                            | 499953                        | o.<br>so       | NAJAS FL<br>POT. ZOS<br>VALLISNE<br>NITELLOP | 1 W F 62 + 1  | RAC<br>44                             | 4. + 0.00<br>4. + 0.00  | 3800                      | 650                   | 9.0                | <b>9</b> .0 |
|              |        | 7              | - 46 | 312765 49<br>312765 49<br>312765 49 | 499959<br>499959<br>499959    | 000<br>000     |  | NG PLANTS<br>NO PLANTS<br>NO PLANTS                               | PRESENT<br>PRESENT<br>PRESENT         |   | 4<br>4000<br>4000<br>4000 | 4 4 4<br>00 4<br>00 0 | 2.22               | <br>        |
|              |        | m              | 1    | 312778 48                           |                               | න<br>හි        | POT. F                                       | POT. RICHARDSONI<br>VALLISNERIA AMER                              | 140.0<br>4.6                          | 104.0   | 4500                      | 310                   | O.5                | 0.0         |
|              |        |                |      | 2 312778 46                         | 489966                        | 60             | POT. RICHA<br>VALLISNERI<br>NITELLOP.        | POT. RICHARDSONI<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA          | 52.0                                  | 37.6<br>2.1.0   | 4500                      | 310                   | . O                | 0.0         |
|              |        |                | 6    | 312778 49                           | 499966                        | ون<br>دن       | POT. RICHA<br>VALLISNERI                     | POT. RICHARDSONI<br>VALLISNERIA AMER                              | H H H H H H H H H H H H H H H H H H H | 63.8  | 4500                      | 310                   |                    | o.o         |
|              |        | 4              |      | • 1                                 | 499972                        | 1.0            | POT. 2<br>VALLIS                             | POT. ZOSTERIFORM<br>VALLISNERIA AMER                              | 1.6<br>16.9                           | 0.7<br>10.0   | 4500                      | <b>8</b> 10           | <del>-</del><br>0. | ø.<br>0     |
|              |        |                | 2    | 312788 4                            | 499972                        | ဝ<br>၈         | VALLISNE<br>NITELLOP                         | VALLISNERIA AMER<br>NITELLOP. OBTUSA                              | 40.7<br>0.5                           | 28.6<br>0.1   | 4500                      | <b>8</b> 40           | 0.                 | <b>6</b> .0 |
|              |        | 1              | c    | 3 312788 49                         | 499972                        | 0.6            | VALLI  | VALLISNERIA AMER  | 27.8                                  | 19.2  | 4500                      | 810                   | o. <del>+</del>    | 6.0         |
|              |        | រភ             | -    | 312803 49                           |                               | ស<br>ស         | CHARA<br>POT. R<br>POT. N                    | CHARA SPP.<br>POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 16.4<br>44.4<br>9.3<br>25.7           | ညည်း<br>4. သည်<br>4. သည်<br>1. သည<br>1. သည်<br>1. သည်<br>1. သည်<br>1. သည<br>1. သည<br>1. သည<br>1. သည်<br>1. သည<br>1. သည်<br>1. သည်<br>1. သည်<br>1. သည်<br>1. သည်<br>1. သည်<br>1. သည်<br>1. သည်<br>1. သည် | 3700                      | <del>.</del><br>00    | 0.7                | o<br>-      |
|              |        |                | 6    | 2 312803 49                         | 499981                        | 7.0            | POT. F<br>POT. Z<br>VALLIS                   | POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER          | 18.4<br>4.6<br>74.9                   | 4. 6. 4<br>4. 6. 8.   | 3700                      | 1100                  | 0.7                | 0.1         |

| 6   | 312803          | 499981                                  | o.<br>`            | POL. CRISPOS<br>POT. RICHARDSONI<br>VALLISNERIA AMER   | 56.0<br>34.2                     | 46.3<br>25.1                                       | 3     | 3   | ò        | -<br>>   |
|-----|-----------------|---|--------------------|--|----------------------------------|--|-------|---|----------|----------|
| : : | 312             | 499986                                  | 0.<br><del>1</del> | VALLISNERIA AMER<br>NITELLOP. OBTUSA   | 31.0<br>0.3                      | 18.5<br>0.1  | 4000  | 650   | 7.1      | 9.       |
|     |                 | 499986                                  | 1.0                | NAJAS FLEXILIS<br>Vallisneria amer<br>Nitellop. Obtusa   | TRACE<br>43.4<br>TRACE           | 27.9   | 4000  | 650   | # C      | 9        |
|     | 312809          | 499986                                  | -<br>-<br>-<br>0.  | VALLISNERIA AMER   | 63.9                             | 42.0   | 4000  | 650   | 1.7      | ÷.       |
|     |                 | 6                                       | 7.0                | VALLISNERIA AMER<br>NITELLOP. OBTUSA   | 8.8<br>249.5                     | 6.0<br>150.6                                       | 1700  | 1200  | 0.4      | 0.0      |
|     | 2 312854 499997 | 499997                                  | 7.0                | MYRIO. SPICATUM<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                                    | 1.5<br>TRACE<br>14.7<br>121.0    | 0.7<br>10.1<br>1.3                                 | 1700  | 1200  | ÷.       | o. o     |
| 6   | 312854 4        | 499997                                  | 7.0                | MYRIO. SPICATUM<br>NAJAS FLEXILIS<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                                      | 3.4<br>0.7<br>2.8.2<br>7.1.2     | 2.0<br>4.0<br>26.3<br>4.0                          | 1700  | 1200  | o<br>-   | o.<br>0  |
| 4   | 312861 4        | 499999                                  | <b>6</b> .0        | MYRIO. SPICATUM<br>NAJAS FLEXILIS<br>POT. CRISPUS<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                      | 63.2<br>TRACE 27.7<br>TRACE 49.8 | 46.6<br>21.0<br>20.5                               | 4400  | 80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>8 | e .<br>0 |          |
| រភ  |                 | 312861 499999                           | 0 · 0              | MYRIG. SPICATUM<br>POT. CRISPUS<br>VALLISNERIA AMER  | 126.4<br>0.6<br>10.5             | 97.9<br>0.3<br>6.2                                 | 4400  | 880   | e . o    | o<br>-   |
| φ   | 312861 4        | 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 7.0                | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. CRISPUS<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | O 4 & 0 4 th                     | 0 24 72 82 7. 4 72 . 4 72 . 4 72 . 4 72 . 4 72 . 7 | 4 400 | 88<br>O   | e. o     |          |
|     | 312843          | 499995                                  | ر.<br>0            | ELODEA CANADENS<br>MYRIO. SPICATUM<br>NITELLOP. OBTUSA   | TRACE<br>TRACE<br>161.8          | 56.0   | 3400  | 450   | 0.2      | o<br>-   |
| 7   | H I             | 499995                                  | 5.0                | SP.  | 4.9<br>184.9                     | 3.4<br>67.2  | 3400  | 450   | 0.2      | <u>.</u> |
|     |                 | 312843 499995                           | ۍ<br>0.0           | MYRIG. SPICATUM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA  | 25.6<br>7.0<br>166.1             | 16.3<br>4.9<br>62.5                                | 3400  | 450   | 0.2      | o<br>-   |
|     | 312843 4        | 499995                                  | 0.9                | MYRIO. SPICATUM  | 202.1                            | 136.8  | 3500  | 1500  | O . S    | 0.3      |
|     | 312843          | 499995                                  | 6.0                |  | 115.0<br>4.0<br>35.2             | 79.6<br>2.8  | 3500  | 1500  | 0.5      | 0.3      |

(

|     | g | 6 312843 49    | 499995  | 0.9     | MYRIG. SPICATUM<br>NITELLOP. OBTUSA   | 129.1<br>65.6                                       | 93.7                      | 3200         | 1500             | O.5          | 0.3    |
|-----|---|----------------|---------|---------|---|---|---------------------------|--------------|------------------|--------------|--------|
| o o | - | 312835 49      | 499993  |         |   | 102.8<br>1.9<br>0 6                                 | 38.6<br>1.6<br>0.2        | 3200         | 1100             | 6.<br>0      | 0.2    |
|     | 2 | 312835 49      | 499993  | 0.<br>9 | NITELLOP. OBTUSA  | 87.5<br>1   | 33.6                      | 3500         | 1100             | 0.3          | 0.2    |
|     | ო | 312835 49      | 499993  | • (     |   | 92.6<br>110.9                                       | 55.2<br>37.6              | 3500         | -<br>-<br>-<br>- | 0.3          | 0.2    |
|     | 4 | 4 312834 49    | 499995  | O.      |   | 202.3<br>23.9<br>8.9                                | 157.1<br>17.0<br>6.2      | 3100         | 009              | 0.3          |        |
|     | ស | 312834 49      |         | O.      | MYRIO. SPICATUM<br>VALLISNERIA AMER   | 121.8   | 95.0<br>6.7               | 3100         | 009              | 0.3          | 0.0    |
|     | φ | 6 312834 49    | 4 99995 | ဝ<br>၈  |   | 22.<br>2.1.<br>2.1.<br>2.1.<br>1.6.<br>1.6.<br>1.6. | 80 4<br>80 4<br>6 6 6 6 7 | 3100<br>3100 | 009              | м.<br>О      | ·<br>· |
| ō   | - | 10 1 312825 49 | 499994  | 7.0     | POT. RICHARDSONI<br>NITELLOP. OBTUSA  | 74.4<br>45.3  | 59.9<br>16.1              | 3700         | 350              | 6.0          | 0.2    |
|     | 8 | 2 312825 49    | 499994  | 7.0     |   | 177.7<br>TRACE<br>11.7                              | 132.1<br>7.7<br>0.9       | 3700         | 350              | <b>s</b> . 0 | 0.2    |
|     | М | 312825 49      | 499994  | 7.0     | NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER | 4.4<br>4.6<br>0.7<br>38.1                           | 6.4.0<br>6.8              | 3700         | 350              | <b>8</b> 0.  | o.2    |

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA 2. TRACE = LESS THAN 0.001 G/M2

| RIVER   | ISLAND 6           | BLOCK<br>NO. | REPLICATE<br>NO.                      | COORD    | RAN<br>INATES<br>LOWER | DEPTH<br>(FT.) | _                  | MACROPHYTE<br>TAXON             | DRY WEIGH    | GHT ASH-FRE<br>WEIGHT | m<br>         | IGHT (FOOT | CANDLES)             | CURRENT (FT     | ./SEC.)         |
|---------|--------------------|--------------|---------------------------------------|----------|------------------------|----------------|--------------------|---------------------------------|--------------|-----------------------|---------------|------------|----------------------|-----------------|-----------------|
| DETROIT | DETROIT HENNEPIN 1 |              |                                       | 1 314061 | 500667                 | 0.0            | P01.               | NARROW                          | 28           | 9                     | 20.6          |            | 1000                 | :               | 0.0             |
|         |                    |              | 7                                     | 2 314061 | 500667                 | <b>6</b> 0.    | POT.<br>VALL       | POT. NARROW<br>VALLISNERIA AMER | 50.1         | -0                    | 32.5<br>4.1   | 4000       | 1000                 | 0.2             | 0.0             |
|         |                    |              | က                                     | 3 314061 | 500667                 | O.             | POT.<br>VALL       | POT. NARROW<br>VALLISNERIA AMER | 54<br>3      | 54.4<br>3.7           | 36.9<br>2.7   | 4000       | 1000                 | 0.5             | 0.0             |
|         |                    |              | 4                                     | 4 314067 | 500670                 | o.<br>9        | POT. NA<br>VALLISN | POT. NARROW<br>Vallisneria Amer | 15.6<br>50.8 | 15.6<br>50.8          | 10.7<br>22.4  | 3900       | 2500                 | 0.2             | 0.0             |
|         |                    |              | ıc.                                   | 314067   | 500670                 | o.<br>9        | POT.<br>VALL       | POT. NARROW<br>Vallisneria amer | 54           | 10.2<br>14.7          | 4.00<br>R. G. | 3900       | 2500                 | 0.2             | o.o             |
|         |                    | 1            | g                                     | 314067   | 500670                 | 0.9            | VALLI              | VALLISNERIA AMER                | 37           | # 9 ·                 | 19.1          |            | 2500                 | 0.2             | 0.0             |
|         |                    | ~            | -                                     | 1 314061 | 500675                 | 0              | POT.               | RICHARDSONI                     | 101.3        | 6                     | 73.4          | 3600       | 330                  | 9.0             | 0.1             |
|         |                    |              | 8                                     | 2 314061 | 500675                 | 0.6            | P01.               | RICHARDSONI                     | 212.2        |                       | 147.0         | 3600       | 330                  | 9.0             | 0.1             |
|         | •                  |              | 6                                     | 3 314061 | 500675                 | 0.6            | POT.               | RICHARDSONI                     | 72           | 72.0                  | 55.1          | 3600       | 330                  | 9.0             | o. <del>1</del> |
|         |                    |              | 4                                     | 314063   | 500676                 | 90 · 80        | MYRIO.<br>POT. N   | O. SPICATUM<br>Narrow           | 77           | 2.9<br>77.6           | 2.2<br>57.2   | 3600       | 130                  | 0.3             | 0<br>           |
|         |                    |              | ம                                     | 314063   | 500676                 | <b>6</b> 0     | POT.<br>VALL       | POT. NARROW<br>VALLISNERIA AMER | 90.2<br>48.6 | 90.2<br>48.6          | 61.7<br>24.1  | 3600       | 130                  | 0.3             | 0.1             |
|         |                    |              |                                       | 6 314063 | 500676                 | <b>6</b> 0     | POT.               | NARROW                          | 65.          | 65.9                  | 51.0          | 3600       | 130                  | 0.3             | o. t            |
|         |                    | ო            |                                       | 314073   | 500683                 | 5.0            | VALL               | VALLISNERIA AMER                | 64           | . 7                   | 34.3          |            | 2500                 | 0.2             | 0.0             |
|         |                    |              |                                       | 314073   | 500683                 | 5.0            | VALL               | VALLI SNERIA AMER               | 24           | 24.8                  | 14.9          |            | 2500                 | 0.2             | 0.0             |
|         |                    | i            | C                                     | 314073   | 500683                 | 5.0            | VALL               | VALLISNERIA AMER                | 126.         | <b>-</b>              | 94.4          |            | 2500                 | 0.2             | o.o             |
|         |                    | 4            | • • • • • • • • • • • • • • • • • • • | 314088   | 500691                 | 6.0            | VALL               | VALLISNERIA AMER                | 74           | 74.9                  | 40.7          | 3600       | 270                  | O. <del>A</del> | 0.3             |
|         |                    |              | 7                                     | 2 314088 | 500691                 | 0.9            | VALLI              | VALLISNERIA AMER                | 44.5         | .5                    | 26.3          | 3600       | 270                  | 9.4             | 0.3             |
|         |                    |              |                                       | 314088   | 500691                 | 0. <b>9</b>    | VALL               | VALLISNERIA AMER                | 6            |                       | 60<br>80      | 3600       | 270                  | 9.4             | 0.3             |
|         |                    | ED.          | -                                     | 314067   | 500687                 | o.             | P01.               | RICHARDSONI<br>NARROW           | 133.8<br>4.9 | <b>8</b> 0 00         | 93.4<br>9.5   | 3300       | 300                  | 0.1             | 0.0             |
|         |                    |              |                                       | 314067   | 500687                 | <b>6</b> 0     | POT.               | RICHARDSONI<br>NARROW           | 165.7<br>1.0 |                       | 114.1<br>0.6  | 3300       | 00<br>00<br>00<br>00 | 0. <del>1</del> | 0.0             |
|         |                    |              | 6                                     | 314067   | 500687                 | 60<br>C        | POT.               | RICHARDSONI<br>NARROW           | 143          | 143.6<br>13.0         | 101.7<br>8.9  | 3300       | 300                  | 0.1             | 0.0             |
|         |                    |              | 314087 1 314087                       | 314083   | 500696                 | 5.0<br>5.0     | POT.               | RICHARDSONI                     | 99           | . 2                   | 36.8          | 2100       | 400                  | 0.3             | 0.0             |

|     | * * *      |                           | # H H H H H   |             | 网络新州谷科教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教   | 10 11 11 11 11 11 11 11 11 11 11 11 11 1 | ****                         |      |   |              |       |
|-----|------------|---------------------------|---------------|-------------|--|--|------------------------------|------|---|--------------|-------|
|     | 7          | 2 314083 5(<br>Bereserren | 314083 500696 | 5.0         | POI. RICHARDSONI   | 223.6                                    | 169.0                        | 2100 | 400                                     | 0.3          | 0.0   |
| *** | 3          | 3 314083 50               | 314083 500696 | 5.0         | POT. RICHARDSONI   | 101.5                                    | 58.8                         | 2100 | \$<br>\$                                | O. 3         | 0.0   |
| 7   | -          | 1 314094 50               | 314094 500703 | 0.9         | VALLISNERIA AMER   | 32.7                                     | 20.9                         | 2700 | 06                                      | 4.0          | 0.0   |
|     | 2          | 2 314094 50               |               | 0.9         | VALLI SNERIA AMER  | 28.2                                     | 17.5                         | 2700 | 06                                      | 0.4          | 0.0   |
|     | 6          | 314094                    |               | 0.9         | VALLISNERIA AMER   | 44.9                                     | 25.2                         | 2700 | 06                                      | 0.4          | 0.0   |
| 60  | -          | 1 314076 5C               | 500704        | O           | RIO. SPICA<br>T. RICHARD<br>T. NARROW  | 219.1<br>31.0                            | 9.6<br>165.9<br>25.8<br>5.0  | 3500 | 540                                     | <b>4</b> . 0 | 0.3   |
|     | 6          | 2 314076 50               | 500704        | 5.0         | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER                                      | 76.5<br>31.6<br>7.4                      | 25.0<br>3.8<br>3.8           | 3500 | 540                                     | 0.4          | 0.3   |
|     | ო          | 3 314076 50               | 500704        | ъ<br>О.     | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER                                      | 52.0                                     | 36.1<br>46.9<br>0.6          | 3500 | 1 0 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | o<br>4.      | 0.3   |
|     | ব          | 4 314076 50               | 500703        | ю<br>О      | POT. RICHARDSONI<br>POT. RARROW<br>VALLISNERIA AMER                                      | 30.0<br>12.4<br>257.8                    | 24.2<br>9.1<br>230.4         | 3500 | 540                                     | 4.0          | 0.3   |
|     | <b>v</b> o | 5 314076 50               | 500703        | و.<br>0     | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER                                      | 74.2<br>22.8<br>25.5                     | 53.7<br>18.0<br>14.9         | 3500 | 540                                     | 4.0          | 0.3   |
|     | <b>o</b>   | 314076                    | 500703        | ر<br>0      | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER                                      | 31.1<br>19.0<br>338.0                    | 18.1<br>14.6<br>317.0        | 3500 | 540                                     | 4.0          |       |
|     | 7          | 7 314075 50               | 500702        | o.<br>9     | MYRIO. SPICATUM<br>NAJAS FLEXILIS<br>POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 265<br>0.6<br>39.3<br>1.3                | 204.6<br>0.2<br>4.4.4<br>8.8 | 4000 | 950                                     | 0.2          | -     |
|     | <b>6</b> 0 | 8 314075 50               | 500702        | <b>6</b> .0 | RICH   | 252.6<br>3.5                             | 183.7<br>3.1<br>2.3          | 4000 | 350                                     | 0.2          | - · o |
|     | <b>o</b>   | 314075 50                 | 500702        | 6.0         |  | 25<br>25<br>4.0<br>4.0                   | 502.6<br>1.9                 | 4000 | 350                                     | 0.2          | 0.1   |
|     | -          | 1 314088 50               | 500708        | ю<br>О      | POT. RICHARDSONI<br>VALLISNERIA AMER   | 35.1                                     | 29.0<br>10.6                 | 3800 | 150                                     | 0.3          | 0.1   |
|     | 7          | 2 314088 50               | 500708        | 0. R        | MYRIO. SPICATUM<br>POT. RICHARDSONI<br>VALLISNERIA AMER                                  | 1.5<br>176.8<br>32.7                     | 155.8<br>19.0                | 3900 | 150                                     | ю.<br>О      | 0.0   |
|     | е          | 314088 50                 | 500708        | ю<br>О      | POT. RICHARDSONI<br>VALLÍSNERIA AMER   | 12.1                                     | 6.3<br>54.7                  | 3800 | 150                                     | 0.3          | 0.1   |
|     | 4          | 4 314088 50               | 500708        | 5.0         | CHARA SPP.   | 3.2                                      | # #                          | 3900 | 150                                     | 0.0          | 0.1   |

| }            |                 |               |             | MYRIO. SPICATUM<br>POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 27.6<br>2.1.0<br>3.6<br>6.5<br>6.3 | 30.0<br>46.7<br>2.5<br>3.5 |                  |      |     |                 |
|--------------|-----------------|---------------|-------------|--|------------------------------------|----------------------------|------------------|------|-----|-----------------|
|              | 5 314088 50     | 500708        | <b>6</b>    |  | 71.2<br>71.2<br>7.3<br>0.7         | 0.6<br>48.7<br>0.9         | 3900             |      | 0.3 | <del>-</del> .0 |
|              | 6 314088 50     | 314088 500708 | 5.0         | CHARA SPP. POT. RICHARDSONI VALLISNERIA AMER                           | 4.0<br>74.9<br>22.2                | 2.5<br>4.8.4<br>13.5       | 3900             | 150  | . O | 0.1             |
|              | 1 314100 50     | 314100 500716 | 9           | VALLISNERIA AMER   | 86.8                               | 50 . O                     | 2700             | 1100 | 0.1 | 0.0             |
|              | 2 314100 5(     | . ^           | <b>0</b> .0 | VALLISNERIA AMER<br>NITELLOP. OBTUSA                                   | 42.2<br>1.0                        | 24.8<br>0.3                | 2700             | 1100 | 0.1 | 0.0             |
|              | 3 314100 50     | 314100 500716 | 6.0         | VALLISNERIA AMER   |                                    | 1                          | 2700             | 1100 | 0.1 | 0.0             |
| -            | 1 314086        | 314086 500717 | 7.0         | POT. NARROW<br>VALLISNERIA AMER  | 29.9<br>20.1                       | 20.5<br>13.7               | 4<br>0<br>0      | 009  | 0.2 | 0.4             |
| i ``         | 2 314086 50     | 314086 500717 | 7.0         | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER                    | 39.7<br>3.8<br>3.8<br>3.0          | 28.1<br>2.8<br>72.0        | 4<br>00<br>100   | 009  | 0.2 | 0.1             |
| .,           | 3 314086        | 314086 500717 | 7.0         |  | 125.1                              | 72.3                       | 4 100            | 009  | 0.2 | 0.4             |
| 12           | 12              | 314100 500723 | 6.5         | VALLISNERIA AMER   | 32.8                               | 14.9                       | 3200             | 680  | 0.0 | 0.0             |
| ` ` '        | 2 314100 50     | 314100 500723 | 6.5         | VALLISNERIA AMER   | 15.1                               | 6.8                        | 3200             | 680  | 0.0 | 0.0             |
|              | 3 314100 50072  |               | 6.5         | · ` :  | 11.0                               | 6.7                        | 3200             | 680  | 0.0 | 0.0             |
| 1            | 1 314097 50     | 500728        | O.          | POT. RICHARDSONI<br>POT. NAROW<br>VALLISNERIA AMER                     | 4.2<br>201.5<br>0.1                | 3.3<br>145.7<br>0.0        | 4000             | 000  | 0.1 | o.<br>o         |
| ; ` <b>`</b> | 2 314097 50072  | 314097 500728 | 8           | POT. NARROW  | 71.6                               | 52.1                       | 4000             | 009  | 0.4 | 0.0             |
|              | 3 314097 500728 | 314097 500728 | 8           |  | 29.1                               | 21.8                       | 4000             | 009  | 0.1 | 0.0             |
| 1 1          | 4 314100 50     | 314100 500731 | 0.6         | POT. RICHARDSONI   | 112.2                              | 70.1                       | <del>4</del> 000 | 600  | 0.1 | 0.0             |
| · • ·        | 5 314100 500731 | 314100 500731 | 0.6         |  | 88.2                               | 62.8                       | 4000             | 009  | 0.1 | 0.0             |
| - (          | 6 314100        | 314100 500731 | 0.6         | RICHARD  | 6.96                               | 64.3                       | 4000             | 009  | 0.1 | 0.0             |
| 4+           | 1 314108 50073  | 314108 500737 | 9.0         | VALLISNERIA AMER   | 142.5                              | 52.6                       | 3000             | 500  | 0.0 | 0.0             |
|              | 2 314108 50073  | 314108 500737 | <b>6</b>    | i - i  | 47.6                               | 38.2                       | 3000             | 500  | 0.0 | 0.0             |
| i "          | 3 314108        | 314108 500737 | 8.0         | VALLISNERIA AMER   | 15.3                               | B. 0                       | 3000             | 500  | 0.0 | 0.0             |
|              |                 |               |             |  |                                    |                            |                  |      |     |                 |

4

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| I./SEC.)  | 1.2                | 1.2                | 1.2                | 0.2           | 0.2              | 0.2                               | 0.1                                    | o. <del>.</del>  | 0.4   | 0.4   | 0.1                                   | 0.1               | 4.0                 | # # O # # 4 . O                | 4.0                                   | 0.0                                |  |
|---|--------------------|--------------------|--------------------|---------------|------------------|-----------------------------------|--|--|---|---|---------------------------------------|-------------------|---------------------|--------------------------------|---------------------------------------|------------------------------------|--|
| CURRENT (F1                                       | 1.7                | 1.7                | 1.7                | 4.0           | 4.0              | <b>o</b> .                        | 0.2                                    | 0.3  | 0.2   | 4.0   | <b>0</b> .4                           | 4.0               | 9.0                 | 9.0                            | 9.0                                   | 0.0                                |  |
| CANDLES)  | 260                | 260                | 260                | 20            | 20               | 20                                | 72                                     | 27   | 72  | 200   | 500<br>200                            | 200               | 250                 | 250                            | 250                                   | 9                                  |  |
| IGHT (FOOT  | 3600               | 3600               | 3600               | 3200          | 3500             | 3500                              | 1100                                   | <u>.</u>   | 100   | 3000  | 3000                                  | 3000              | 2100                | 2100                           | 2100                                  | 2400                               |  |
| ASH-FREE L<br>Weight<br>(G/M2)                    | 42.2               | 0.18               | 12.9               | 14.1          | 23.6<br>54.8     | 8.8<br>46.4                       | 25.5<br>26.1                           | 242.4<br>34.94<br>3.90<br>3.00                                 | 8. 6. 6. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. | 65.4<br>5.2<br>19.6                                   | 123.0<br>14.3                         | 89.8<br>12.2      | 0.1<br>12.0<br>34.8 | 20.0<br>22.9                   | 12.6<br>53.8                          | 282.2                              |  |
| DRY WEIGHT (G/M2)                                 | 62.0               | 120.1              | 22.8               | 19.6<br>114.4 | 32.3             | 11.1                              | 36.9                                   | 62.00<br>40.00<br>6.00   | 77.8<br>4.7<br>6.5                              | 9.00<br>9.00<br>9.00                                  | 174.4                                 | 121.8             | 0.3<br>15.9<br>57.1 | 26.1<br>33.3                   | 85.88                                 | 532.4<br>TRACE                     |  |
| TH MACROPHYTE .) TAXON                            | O VALLISNERIA AMER | O VALLISNERIA AMER | O VALLISNERIA AMER |               | O POT. GRAMINEUS | O POT. NARROW<br>VALLISNERIA AMER | O POT. RICHARDSONI<br>VALLISNERIA AMER | ELODEA CANADE<br>POT. RICHARDS<br>POT. NARROW<br>VALLISNERIA A |   | O MYRIO. SPICATUM<br>POT. CRISPUS<br>VALLISNERIA AMER | O MYRIG. SPICATUM<br>VALLISNERIA AMER | O MYRIO. SPICATUM |                     | O POT. NARROW                  | O POT. NARROW<br>VALLISNERIA AMER     | O ELODEA CANADENS HETERANTHERA DUB | 经经营税 医乳球性 医乳球性 医乳球性 医乳球性 医乳球球球球球球球球球球球球球球球球球 |
| DEPTH<br>ES (FT.)<br>WER                          |                    | 9.0                | 0.6                | - 7.0         | 7.               | - 7.0                             | - 7.0                                  | - 7.0  | 7.  | 6   | 6                                     | О                 | 7.0                 | . T                            | 0.7                                   |                                    | ***************************************      |
| REPLICATE LORAN<br>NO. COORDINATES<br>UPPER LOWEI | 314222             | 2 314222           | 3 314222           | 314215        | 314215           | 314215                            | 314204                                 | 314204   | 3 314204  | 4 1 314201  | 2 314201                              | 3 314201          | ı                   | 6  <br>6   1<br>10  <br>10   1 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | R                                  | 16 16 16 16 16 16 16 16 16 16 16 16 16 1     |
| REPLICATE<br>NO.                                  |                    | 2                  |                    |               | t (              | ၈                                 | -                                      | ď  | 6   | -   | 2                                     | Ю.                |                     |                                |                                       | H<br>R<br>N                        | A<br>A<br>A<br>A                             |
| LOCK<br>NO.                                       | -                  |                    | 0                  | 7             |                  | 1                                 | က                                      |  | !   | 4   |                                       |                   | ı,                  |                                |                                       | #<br>#<br># 49<br>#                |  |
| ISLAND  | STONY              |                    |                    |               |                  |                                   |  | •  |   |   |                                       |                   |                     |                                |                                       |                                    |  |
| RIVER   | DETROIT            |                    |                    |               |                  |                                   |  |  |   |   |                                       |                   |                     |                                |                                       |                                    |  |

|   | 3.0 ELODEA CANADENS HETERANTHERA DUB                                      | 2.4<br>2.4<br>432.0 33 | 2 6.1                    | 2400<br>1500 | . 100    | # 11 11 11 11 11 11 11 11 11 11 11 11 11 | 0.0          |
|---|---|------------------------|--------------------------|--------------|----------|--|--------------|
| 3.0 MYR<br>VAL                              | MYRIO. SPICATUM<br>WYRIO. SPICATUM<br>VALLISNERIA AMER                    | 112.1                  | 85.0                     | 200          | 100      | 0.2                                      | 0.1          |
| 3.0 MYRIO.<br>VALLISM                       | SER   | றை                     | 40                       | 200          | <u>8</u> | 0.2                                      | 0.1          |
| 3.5 ELODEA<br>Heteran<br>Myrio.             | ELODEA CANADENS<br>HETERANTHERA DUB<br>MYRIO. SPICATUM                    | 95.7<br>85.7<br>8.73   |                          | 4000         | 1300     | 0.2                                      | 0.2          |
| 3.5 ELODEA<br>HETERAN                       |   | 2.1<br>94.9 (          | 4 4.68.3                 | 4000         | 1300     | 0.2                                      | 0.2          |
| 3.5 ELODEA<br>HETERAP<br>MYRIO.             | ELODEA CANADENS<br>HETERANTHERA DUB<br>MYRIO. SPICATUM                    | 1.1<br>180.8<br>13.4   | 0.7 4<br>36.1<br>6.2     | 4000         | 1300     |  | 0.2          |
| 6.0 HETER<br>VALLI                          | HETERANTHERA DUB<br>VALLISNERIA AMER                                      | თ.<br>ი.               | 3.7                      | 2300         | 009      | 2.1                                      | 2.0          |
|   | ELODEA CANADENS<br>HETERANTHERA DUB<br>MYRIO. SPICATUM<br>POT. CRISPUS    |                        | 7 9 0 0                  | 2300         | 009      |  | 2.0          |
| 6.0 HETERAN<br>MYR10.<br>POT. CR<br>VALLISN | HETERANTHERA DUB<br>MYRIO. SPICATUM<br>POT. CRISPUS<br>VALLISNERIA AMER   | o                      | 0.7<br>0.0<br>1.2<br>6.6 | 2300         | 009      | 2.1                                      | 0.           |
| 3.0 MYRIG.<br>VALLIS                        | Z   | 50.8<br>0.8            | 39.7 3<br>0.5            | 3000         | 1700     | o.s                                      | o.5          |
| 3.0 MYRID.                                  | YRIO. SPICATUM  |                        | -                        | 3000         |          |  | o<br>.s      |
| •   | MYRIO. SPICATUM   |                        |                          | 3000         |          |  | 0.5          |
| :   |   |                        |                          | 2000         |          |  | <b>8</b> 9.0 |
| 4.0 HETERA<br>Myrio.                        | ). SPICATUM<br>SNERIA AMER  | 20,1<br>151.5          | 13.8 2                   | 2000         | 1100     | g. O                                     | <b>80</b>    |
| 4.0 MYRIO, SPICA<br>VALLISNERIA             | MYRID. SPICATUM<br>VALLISNERIA AMER<br>FEEFERINGER DUB<br>MYRIO. SPICATUM |                        | 7.1                      | 2000<br>2000 | 1100     | <b>6</b> .0                              | <b>8</b> 0.  |

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE - LESS THAN 0.001 G/M2

| RIVER ISLAND   | 18 N | BLOCK R<br>NO. | REPLICATE<br>NO. | LICATE LORA<br>O. COORDIN<br>UPPER | RAN<br>INATES<br>LOWER | DEPTH<br>(FT.)       |                       | MACROPHYTE<br>TAXON                              | DRY WEIGHT (G/M2)             | ASH-FREE (<br>WEIGHT<br>(G/M2) | LIGHT (FOOT<br>SURFACE           | CANDLES)                               | CURRENT (FT              | r./SEC.) |
|----------------|------|----------------|------------------|------------------------------------|------------------------|----------------------|-----------------------|--|-------------------------------|--------------------------------|----------------------------------|--|--------------------------|----------|
| ST. CLAIR STAG |      |                | - 46             | 309021<br>309021<br>309021         | 4441                   | ===<br>000           |                       | NO PLANTS<br>NO PLANTS<br>NO PLANTS              | PRESENT<br>PRESENT<br>PRESENT |                                | 1200<br>1200<br>1200             | 630<br>630<br>630                      | 2.2.2<br>2.3.8<br>3.8    | 4.4.4.   |
|                |      |                |                  | 309035<br>309035<br>309035         | 444                    | 22.0<br>22.0<br>20.0 |                       | NO PLANTS<br>NO PLANTS<br>NO PLANTS              | PRESENT<br>PRESENT<br>PRESENT |                                | 1200<br>1200<br>1200             | 009                                    | 2.6<br>2.6<br>2.6<br>2.6 |          |
|                |      |                | -06              | 309029<br>309029<br>309029         | 444                    | <br>000              |                       | NO PLANTS<br>NO PLANTS<br>NO PLANTS              | PRESENT<br>PRESENT<br>PRESENT |                                | 5 5 5<br>0 0 0<br>0 0            | 610<br>610<br>610                      | 2.22                     |          |
|                |      |                | - 26             | 309038<br>309038<br>309038         | 444                    | 12.0<br>12.0<br>0.0  |                       | NO PLANTS<br>NO PLANTS<br>NO PLANTS              | PRESENT<br>PRESENT<br>PRESENT |                                | 720<br>720<br>720                | 4 8 0<br>4 8 0<br>6 0 8 4<br>6 0 0 8 4 | 444                      | #        |
|                |      | ម              | -                | 309032                             | 497391                 | 0.<br>0.             | P01.                  | GRAMINEUS<br>Narrow                              | 1.0<br>115.1                  | 0.9<br>103.4                   | 1000<br>0                        | 120                                    | 1.7                      | 0.0      |
|                |      |                |                  | 309032                             | 497391                 | 0.6                  | ! !                   | NARROW   | 330.8                         | 288.1                          | -<br>000<br>0                    | 120                                    | 1.7                      | 0.0      |
|                | •    |                |                  | 309032                             | 497391                 | 0.<br>0.             | ! !                   | NARROW   | 143.3                         | 115.1                          | 1000                             | 120                                    | 1.7                      | 0.0      |
|                |      |                | -                | 309039                             | 497397                 | 5.0                  | <b>&amp;</b>          | SPP.<br>GRAMINEUS<br>NARROW                      | 534.4<br>9.9<br>7.8           | 183.7<br>8.4<br>7.2            | 1000                             | 720                                    | o. <del>-</del>          | 0.0      |
|                |      |                |                  | 90903                              | 497397                 | S.0                  | ! 🛫 !                 | SPP.<br>GRAMINEUS<br>NARROW                      | 677.2<br>18.0<br>9.0          | 213.8<br>12.8<br>7.2           | 1000<br>1000                     | 720                                    | 0                        | 0.0      |
|                |      |                | ო                | 30903                              | 497397                 | s.0                  | CHARA<br>POT.         | SPP.<br>GRAMINEUS<br>NARROW                      | 422.2<br>7.3<br>TRACE         | 143.2<br>5.9                   | 1000<br>0                        | 720                                    | o. <del>.</del>          | 0.0      |
|                |      | 7              | -                | 309037                             | 497397                 | 7.5                  | EL00E<br>POT.<br>POT. | ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. NARROW | 7.6<br>42.3<br>252.6          | 29.2<br>202.8                  | <del>-</del><br>00<br>100<br>100 | 560                                    | <b>6</b> . O             | <b>o</b> |
|                |      |                | 2                | 2 309037                           | 497397                 | 7.5                  | P0T.                  | NARROW   | 320.1                         | 280.9                          | 1100                             | 560                                    | 6.0                      | 0.4      |
|                |      |                |                  | 309037                             | 497397                 | 7.5                  |                       | GRAMINEUS<br>Narrow                              | 9. 1<br>309. 5                | 1.6<br>274.7                   | -                                | 560                                    | <b>6</b> .0              | 4.0      |
|                |      |                |                  | 309034                             | 497396                 | ю.<br>О              | P01.                  | RICHARDSONI<br>NARROW                            | 289.6<br>18.2                 | 214.7<br>14.7                  | 3500                             | 250                                    | O<br>4.                  | 0.0      |
|                |      |                | K (              | 309034                             | 497396                 | ر.<br>0              |                       | RICHARDSONI<br>NARROW                            | 372.7<br>24.4                 | 275.0<br>19.6                  | 3500                             | 250                                    | 4.0                      | 0.0      |
|                |      |                |                  | 309034 4                           | 497396                 | S.0                  | <b>.</b>              | GRAMINEUS  | 336.4<br>115.1                | 250.2<br>96.6                  | 3500                             | 250                                    | 0<br>4.                  | 0.0      |

|          | # <b>-</b>             | 7 309032  | 497393 | 3.0         | CHARA SPP.   | 617.6                               | 212.5                              | 1000   | 800 | 1.5     | 0.2             |
|----------|------------------------|-----------|--------|-------------|--|-------------------------------------|------------------------------------|--|-----|---------|-----------------|
|          | H<br>H<br>H<br>GO<br>K | 8 309032  | 497393 | 3.0         | . 2  | 351.0<br>4.9                        | 4.0<br>144.0                       | 1000   | 800 | 7.5     | 0.2             |
|          | 6                      | 309032    | 497393 | 3.0         | CHARA SPP. POT. NARROW   | 166.7<br>153.4                      | 46.2                               | 1000   | 800 | 1.5     | 0.2             |
|          | - !                    | 1 30904 1 | 497399 | ر<br>ا<br>ا | CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS   | 175.6<br>2.0<br>55.4<br>2.8         | 61.3<br>1.4<br>39.4                | 650  | 400 | 0.7     | 0.0             |
|          | 2                      | 2 309041  | 497399 | 5.0         | CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow  | 256.6<br>82.8<br>20.1               | 96.4<br>65.2<br>17.2               | 029<br>8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 400 | 0.7     | O. <del>1</del> |
|          | e                      | 3 309041  | 497399 | o. œ        | A O Z  | 90.5<br>90.6<br>19.5                | 32.5<br>70.4<br>17.1               | 650  | 400 | 0.7     | o               |
|          | 4                      | 309043    | 497399 | <b>6</b> .0 |  | 115.1<br>105.6                      | 89<br>.39                          | 590  | 380 | 0       | 6.3             |
|          |                        | 309043    | 497399 | O.9         |  | 57.7                                | 44.8<br>215.1                      | 590  | 380 | 0       | 6.3             |
|          | y                      | 6 309043  | 497399 | <b>9</b> .0 | POT. GRAMINEUS<br>POT. NARROW  | 160.5<br>133.9                      | 126.6<br>118.2                     | 590  | 380 | o.<br>- | 0.3             |
| <b>6</b> | -                      | 309034    | 497400 | O . 80      | DDEA CA  | 29.9<br>136.0                       | 22.5<br>108.4                      | 4000   | 700 | 9.0     | 0.0             |
|          | 2                      | 309034    | 497400 | <b>6</b> 0  | ELODEA CANADENS<br>POT. RICHARDSONI<br>NITELLOP. OBTUSA                                  | 19.3<br>88.1<br>5.5                 | 72.4<br>72.8                       | 4000   | 700 | 9.0     | 0.0             |
|          |                        | 309034    | 497400 | <b>6</b> 0  | DEA CA   | 10.8                                | 7.97                               | 4000   | 700 | 0.6     | 0.0             |
|          |                        | 860606    | 497398 | 0.8         | CHARA SPP.<br>ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI<br>POT. NARROW      | 3.2<br>3.6<br>189.2<br>17.0<br>22.3 | 1.5<br>2.6<br>161.9<br>13.9<br>8.1 | 3600   |     |         | 0.2             |
|          | ស                      | 309038    | 497398 | <b>6</b> 0  | EA CANADO. SPICA<br>RICHARD<br>NARROW  | 125.6<br>132.1<br>42.8<br>33.6      | 90.4<br>98.7<br>28.0               | 3600   |     | 0.      | 0.2             |
|          | υ                      | 6 309038  | 497398 | . co        | ELODEA CANADENS<br>MYRIO. SPICATUM<br>NITELLA HYALINA<br>POT. KICHARDSONI<br>POT. NARROW | 98.3<br>98.3<br>9.2<br>9.2<br>9.2   | 78.0<br>78.0<br>35.7               | 70 00 00 00 00 00 00 00 00 00 00 00 00 0     |     |         | 0               |
| 10       |                        | 309056 v  | 497407 | 12.0        | ALTELLA HYALINA<br>NITELLA HYALINA   |                                     | 16.9                               | 41   | 21  | 0.4     | 0.1             |

4-41

| 2 309056 49    | 1         |        |                   | POT. NARROW   | 1                                   | 1.5                           | 1.2  |  |  |  |       |
|----------------|-----------|--------|-------------------|---|-------------------------------------|-------------------------------|--|--|--|--|-------|
|                | 309056 49 | 497407 | 12.0              | CHARA SPP.<br>POT. GRAMINEUS  | EUS                                 | 186.2                         | 76.4   | 41                                     | ii 🕶                                     | 0.4 W                                  | 0.4   |
| )E             | 309056 49 | 497407 | 12.               |   | SONI                                | 77.0<br>46.7<br>34.0          | 32.3<br>38.3<br>28.4                           | ## ## ## ## ## ## ## ## ## ## ## ## ## |  | H H H H H H H H H H H H H H H H H H H  | # O   |
| 11 1 309046 49 | 309046 49 | 497409 |                   | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI<br>POT. NARROW | DENS<br>ATUM<br>DSONI               | 9.7<br>135.7                  | 12.7<br>7.3<br>68.9<br>114.4                   | 420                                    | 10 00 00 00 00 00 00 00 00 00 00 00 00 0 |  | 0.0   |
| Š              | 309046 49 | 497409 | ю                 | ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW                    | DENS<br>DSONI                       | 46.8<br>27.9<br>311.1         | 31.0<br>17.5<br>245.7                          | 420                                    |  | 11 11 11 11 11 11 11 11 11 11 11 11 11 | 0.0   |
| 3 309046 49    | 309046 49 | 497409 | ເດ<br>ເວ          | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSON)<br>POT. NARROW | DENS<br>ATUM<br>OSONI               | 15.7<br>0.5<br>83.7<br>117.1  | 11.1<br>0.3<br>63.6<br>91.3                    | 420                                    | 60<br>60                                 | . O                                    | 0.0   |
| õ              | 309048 49 | 497403 | <del>-</del><br>0 | CAN<br>SPI<br>ICHA  | IADENS<br>CATUM<br>ROSONI<br>OBTUSA | 2.7<br>0.7<br>114.8<br>0.5    | 1.7<br>0.6<br>77.2<br>0.4                      | 470                                    | თ  | e. 0                                   | 0.0   |
| 5 309048 49    | 309048 49 | 497403 | 11.0              | ELODEA CANADENS<br>POT RICHARDSONI<br>NITELLOP OBTUSA                 | ADENS<br>RDSONI<br>OBTUSA           | 30.7<br>114.5<br>10.4         | 21.0<br>88.0<br>5.1                            | 470                                    | o,                                       | 6.0                                    | 0.0   |
| 309048 49      | 309048 49 | 497403 | <del>-</del> 1.0  | EA SPP<br>CO. SP<br>RICH<br>NARR                                      | NADENS<br>ICATUM<br>ARDSONI         | 6 0<br>0 0<br>0 0             | 4.0<br>62.2<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0 | 470                                    |  |  | o     |
| 7 309046 49    | 309046 49 | 497410 | 2.5               |   | EUS                                 | 55.5<br>3.0                   | 16.9<br>2.5                                    | 46                                     | 44 44 44 44 44 44 44 44 44 44 44 44 44   | 4.0                                    | . O   |
| 8 309046 49    | 309046 49 | 497410 | 2.5               | CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS                              | LIS                                 | 231.1<br>4.7<br>26.7          | 84.9<br>3.7<br>11.3                            | 46                                     | 43                                       | 4.0                                    | 0.3   |
| 9 309046 49    | 309046 49 | 497410 | 2<br>.s           |   | LIS                                 | 264.2<br>8.2<br>13.1<br>0.7   | 9<br>9<br>9<br>9<br>9<br>9<br>9<br>9           | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4  | 64                                       | 4.0                                    | e · 0 |
| 12 1 309044 49 | 309044 49 | 497408 | # KD              | ELODEA CANADENS MYRIO. SPICATUM                                       | ATUM                                | 10.6<br>152.5<br>2.6          | 111.0  | 2000                                   |  |  | 0.0   |
| 2 309044 49    | 309044 49 | 497408 |                   | CHARA SPP. CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM                 | ENS                                 | TRACE<br>1.0<br>87.2<br>156.1 | 0.7<br>69.8<br>127.3                           | 2000                                   | 000                                      | e.<br>O                                | o. o  |

|             | 6        | 309044     | 497408 | 80 H    | ELODEA CANADENS<br>MYRIO. SPICATUM   | 57.6<br>81.1                                    | 43.1                                | 2000  | 1000   | o.3     | 0.0        |
|-------------|----------|------------|--------|---------|--|---|-------------------------------------|---|--|---------|------------|
|             | 4        | 4 309044   | 497409 | 3.0     | CHARA S<br>POT. GR   | 176.9   | 56.0                                | 3400  | 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | 0.7     | 0.4        |
|             | 20 H     | 5 309044 v | 497409 | 3.0     | CHAR   | 222.1   | 75.2                                | 3400  | 2500   | 0.7     | 0.4        |
|             | 9        | 309044     | -      | 3.0     | CHARA  | 229.3   | 74.4                                | 3400  | 2500   | 0.7     | 0.4        |
|             | 7        |            |        | က်<br>က | SONI   | 182.4<br>27.5<br>27.5<br>53.4<br>15.1           | 53.2<br>20.2<br>0.6<br>43.9<br>12.0 | 720   | 390  | 0.2     | o.<br>o    |
|             | ω        | 309041     | 497408 | ស<br>ស  |  | 14 1 2 1 4 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5  | 48.4<br>0.7<br>22.3<br>22.0         | 720   | 0000   | 0.2     | 0.0        |
|             | ത        | 309041 4   | 497408 | η.      | . 4 m 0 _ ~ 1  | 2.4.2<br>6.0<br>8.0<br>9.0<br>9.0<br>9.0<br>9.0 | 34.1<br>34.1<br>2.9<br>51.2<br>35.1 | 720   |  | 0.2     | <b>o</b> . |
| £           |          | 309060 4   | 497414 | O.      | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI<br>NITELLOP. OBTUSA | 10.0<br>28.2<br>65.2<br>4.2                     | 27.8<br>22.2<br>0.6                 | 0   |  | 0.2     | 0.0        |
|             | 2        | 2 309060 4 | 497414 | O.      | CAL  | 83.9<br>0.2                                     | 32.0<br>64.1                        | 110   | · 利 师 师 师 师 师 师 所 就 听 听 就 听 听 就 听 听 就 看 "  | 0.2     | 0.0        |
|             | ဗ        | 309060     | 497414 | O. 6    | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI                     | 18.7<br>104.5<br>8.7                            | 13.4<br>82.7<br>7.0                 | 110   |  | 0.2     | 0.0        |
| i<br>I      | -        | 309068     | 497418 | O.      | POT. RICHARDSONI<br>POT. NARROW  | 5.9   | 5.1                                 | 70  |  |         | 0.2        |
|             | 7        | 2 309068 4 | io 1   | O. 6    |  | 7.9<br>13.1<br>166.3                            | 2.6<br>4.3<br>132.8                 | 70  | 55<br>20   |         | 0 . 2      |
| 0<br>0<br>0 |          | 309068     | 497418 | o.<br>6 | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. NARROW                           | TRACE<br>6.3<br>113.2                           | 3.2                                 | . O. C. | H<br>H<br>H<br>H<br>H<br>H<br>L<br>C<br>C<br>H<br>H<br>L<br>C<br>C<br>H<br>H<br>H<br>H<br>H<br>H |         | 0.2        |
| ,           | -        | 1 309074 4 | 497426 | 2.5     | 1 <b>4</b> 1   | 261.7<br>6.6<br>0.5                             | 78.2<br>4.5<br>0.4                  | 0 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4     |  | 4.0     | 0.2        |
| l           | 2        | 309074 4   | 497426 | 2.5     | 2  | 100.7   | 30.2<br>0.3                         | 140   | 110  | # 4 · 0 | 0.2        |
|             | <b>6</b> | 309074     | 497426 | 2.5     | ı ev   | 142.9   | 58.0                                | 140   | 110  | 0.4     | 0.2        |

|                               | ***************************************  | e.<br>O | 0.3                                   | 0.3  |
|-------------------------------|--|---------|---------------------------------------|--|
|                               |  | 0.7     | 0.7                                   | 0.7  |
|                               | 12.5 210 100   | 3       | 1.1 210 100                           | 100  |
|                               | 210  |         | 210                                   | 18.5 210 Rp p  |
| 0 <del>-</del><br>2 t         | 12.5   | 71.1    | 1.1                                   | ######################################                   |
| 6. e                          | 31.5   | 410.9   | 3.3<br>155.4                          | 45   |
| POT, GRAMINEUS<br>POT, NARROW | 4 309076 497427 7.0 NITELLA MATALINA 31.5 12.5 210 100 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 |         | POT. GRAMINEUS                        | 6 309076 497427 7.0 CHARA SPP. 45.9 18.5 210 100 0.7 0.3 |
|                               | 7.0  | 7.0     | # H                                   | 7.0  |
| )<br>                         | 497427   | 497427  | # # # # # # # # # # # # # # # # # # # | 497427   |
| H<br>H<br>H<br>H              | 309076   | 309076  | #<br>#<br>#<br>#                      | 309076   |
| N<br>11<br>10<br>00<br>01     | 4  | 5       | H H                                   | ဖ  |
|                               |  |         |                                       |  |

SUBMERSED MACROPHYTE PONAR DAJA, SEPTEMBER, 1983

RIVER

ST. CLAIR FAWN

1

............ ASH-FREE LIGHT (FOOT CANDLES) CURRENT(FT./SEC.) 医多种性 医多种性 医多种性 医多种性 SURFACE BOTTOM 0.0 0.0 0.0 0.0 -0 ÷. 0.0 0.0 0.0 0.0 0.0 -0.3 9.0 1.7 ---9.0 1.7 7. 0.3 0.3 --÷. NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2 SURFACE BOTTOM 530 9 9 5 230 230 230 ∞ 530 • œ 20 2 2 3100 3400 3700 3700 3100 278 378 318 3400 3400 3500 3500 3500 2700 <del>6</del> 0 -**4** 5 6.2 5. G ю. О 9.2 29.8 0.5 53.2 67.4 146.5 26.0 80.8 69.8 253.5 210.1 137.1 97.8 99.3 147.8 14.9 174.7 128.8 214.2 <u>∵</u> 210 32. ø WE I GHT (G/M2) DRY WEIGHT 0.5 2.2 128.3 278.0 1.5 280.6 3 8 10.2 186.7 8 389.5 213.9 12.9 177.8 73.5 231.2 153.8 4.14 101.2 9 271.1 1.5 **ũ** ο (G/M2) 6 126. 45 TRACE 3 309568 498248 10.0 POT. RICHARDSONI POT. RICHARDSONI POT. RICHARDSONI POT. RICHARDSONI RICHARDSONI POT. RICHARDSONI POT. RICHARDSONI POT. RICHARDSONI ELODEA CANADENS MYRIO. SPICATUM NITELLA HYALINA NITELLA HYALINA POT. GRAMINEUS POT. ZOSTERIFOR POT. GRAMINEUS POT. GRAMINEUS POT. GRAMINEUS POT GRAMINEUS POT. GRAMINEUS POT. GRAMINEUS MACROPHYTE TAXON POT. NARROW POT . NARROW NARROW NARROW POT. NARROW POT NARROW CHARA SPP. CHARA SPP CHARA SPP CHARA SPP POT. P01. POT. DEPTH (FT.) 309572 498256 6.0 0.8 0.6 0.6 0.6 0.9 8 8 309586 498257 12.0 309568 498248 10.0 <u>0</u> 309586 498257 12.0 309586 498257 12.0 309568 498248 309589 498259 309572 498256 UPPER LOWER 309582 498256 309589 498259 309589 498259 309582 498256 309582 498256 COURDINATES LORAN REPLICATE m 4 ហ ø ~ ო a ~ BLOCK NO. 8 6

Ö

ZOSTERIFORM

|   | H<br>H<br>H<br>H<br>F<br>F<br>C<br>C | 3 309572   | 498256 | # O .    | CHARA SPP. ELODEA CANADENS POT. GRAMINEUS                                 | 62.7<br>1.6<br>202.2<br>33.3  | 21.7<br>1.1<br>141.9<br>25.6         | 2700           | 530  | 9.0      | D. 0         |
|---|--------------------------------------|------------|--------|----------|---|---|--------------------------------------|----------------|------|----------|--------------|
|   | -                                    | 309600     | 498266 | 0        | 4   | 2.9<br>68.4<br>51.7   | 50.5<br>42.1<br>0.9                  | 000            | 2500 | . O      | 0.2          |
|   | a                                    | , C        | 498266 | O.       | CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI POT. NARROW     | 24.2<br>54.2<br>67.9<br>6.3<br>6.3  | 7.7<br>0.6<br>38.5<br>54.7<br>0.2    | 4000           | 2500 |          |              |
|   | 9                                    | <b>#</b> 1 | 498266 | o.       | Z Z Z Z   | 47.3<br>62.2<br>3.2<br>18.8   | 0.04<br>0.04<br>0.04<br>0.05<br>0.05 | 4000           | 2500 | 0. 7 . 0 | 0.2          |
| 9 | -                                    | 1 309595   | 498266 | 3.0      | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI                          | 195.2<br>0.5<br>0.4   | 60<br>0.2<br>2.8                     | 3800           | 3000 | 0.6      | 9 · 0        |
|   | 7                                    | 309595     | 4982   | 3.0      | RA SPP.<br>AS FLEXIL  | 182.9<br>TRACE  | 58.7                                 | 3800           | 3000 | O.6      | <b>1</b> - 1 |
|   |                                      | , ,        | 498266 | 0<br>0   | CHARA SPP.<br>NAJAS FLEXILIS  | 114.9<br>0.3  | 32.4<br>0.4                          | 3800           | 3000 | 0.6      | 0.6          |
|   |                                      | i '' (     | 498263 | න<br>හ   | SPP. A CANADE RICHARDS NARROW   | 6 + 28<br>6 - 28<br>6 - 20<br>7 | 7.2<br>41.1<br>62.9                  | 3900           | 110  | 0<br>4   | 0.0          |
|   | # :<br># :                           | 309595     | 498263 | eo<br>Fu | ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW                        | 260.7<br>8.9<br>22.3  | 188.4<br>6.7<br>18.7                 | 3900           | 110  | 4.0      | o.<br>o      |
|   | *<br>*                               | 309595     | 498263 | න<br>ැැ  | <u> </u>  | 90.4<br>4.9<br>92.9   | 64.8<br>3.3<br>48.1                  | 3900           | 110  | 0<br>4   | 0.0          |
| 7 | N .                                  | <b>P</b> 1 | 498266 | و.<br>0. | CHARA SPP. ELODEA CANADENS NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI | 112.5<br>1.1<br>12.5<br>42.1<br>17.7<br>58.4  | 46.1<br>0.7<br>33.9<br>34.5          | -1500<br>-1500 | 350  | 0.5      | o.<br>o      |
|   |                                      | 309584     | 498266 | 9.0      | POT. GRAMINEUS<br>POT. NARROW   | 69.3  | ក្ 4<br>ស ស<br>ភ ស                   | 1500           | 036  | 0.2      | 0.0          |
|   | 6                                    | 1          | 498266 | 3.0      | CHARA SPP.<br>POT. GRAMINEUS  | 25.9  | 10.3<br>88.7                         | 1500           | 350  | 0.0      | 0.0          |

|              | 4 | 309585       | . 4    | 3.0            | CHARA  | A Spp.  | 22.3<br>################################### | 38.7<br>16.1                                    | 2 100                 | 1800 | 9.0                                   | 9.0     |
|--------------|---|--------------|--------|----------------|--|---|---|---|-----------------------|------|---------------------------------------|---------|
|              |   | 309585       | 1 4    | 3.0            | CHARA  | CHARA SPP.  | 73.4  | 27.1  | 2100                  | 1800 | 0.8                                   | 9.0     |
|              |   | 309585       | 498263 | 3.0            | CHARA  |   | 72.5  | 27.3  | 2100                  | 1800 | 0.8                                   | 9.0     |
| <b>.</b>     | - | •            | 498270 | 0.<br>0.       | CHARA<br>POT.<br>POT.<br>POT.<br>VALLI       | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER     | 1.7<br>134.2<br>23.5<br>TRACE<br>2.7        | 0.6<br>100.1<br>18.4<br>2.0                     | 4400                  | 800  | . O                                   | 0.      |
|              | 2 | 309605       | 498270 | 5.0            | # <b>«</b>                                   |   | 7.4<br>133.3<br>10.0                        | 3.0<br>102.1<br>8.1                             | 4400                  | 1800 | o.5                                   | 0       |
|              | 6 | 3 309605     | 498270 | O.             | ! ≴  |   | 2.1<br>159.1<br>49.5<br>0.9                 | 0.8<br>119.2<br>39.6<br>0.7                     | 4400                  | 1800 | o .                                   | 0       |
| <b>o</b>     | - | 9 1 309598 2 | 498273 | 2.5            | ! ゑ .  | SPP.  | 131.4                                       | 43.5  | 4 100                 | 3900 | 4.0                                   | 0.2     |
|              | 2 | 309598       | 498273 | 2.5            | CHARA<br>POT.                                | A SPP. GRAMINEUS  | 342.6                                       | 98.4  | 4 100                 | 3900 | 4.0                                   | 0.2     |
|              | 6 | 309598       | 498273 | 2.5            | CHARA<br>POT.                                | SPP.  | 219.5<br>TRACE                              | 69.7  |                       | 3900 | 4.0                                   | 0.2     |
|              | - | 309619       | 498281 | <b>8</b><br>O. | CHARA<br>NAJAS<br>POT.                       | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS<br>VALLISNERIA AMER                      | 338.3<br>9.6<br>51.5                        | 117.1<br>7.2<br>38.4<br>8.0                     | # 4<br># 100<br># 100 | 1400 | # # # # # # # # # # # # # # # # # # # | o.<br>- |
|              |   | 309619       | 498281 | <b>6</b> 0     | CHARA SP<br>NAJAS FL<br>POT. GRA<br>VALLISNE | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS<br>VALLISNERIA AMER                      | 171.6<br>4.9<br>15.4<br>2.5                 | 20.00<br>20.00<br>20.00                         | 4 100                 | 1400 | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | o.<br>- |
|              | 6 | 309619 4     | 498281 | <b>8</b> 0     | CHARA<br>NAJAS<br>POT.                       | CHARA SPP. NAJAS FLEXILIS POT GRAMINEUS   | 159.0<br>7.8<br>20.0                        | 58.3<br>5.4<br>14.2                             | 4 100                 | 1400 |                                       | O.      |
| <del>-</del> | - |              | 498279 | ស              | CHARA<br>NAJAS<br>POT.<br>POT.<br>VALLI      | CHARA SPP.  CHARA SPP.  POT. GRAMINEUS  POT. RICHARDSONI  POT. NARROW  VALLISNERIA AMER | 194.3<br>0.14.3<br>12.33<br>14.33           | 7.0<br>4.0<br>7.0<br>7.0<br>7.0<br>7.0<br>7.0   | 4 200<br>0 2 4        | 5200 | 9<br>O                                | რ       |
|              | 6 | 309612       | 498279 | ທ<br>ທ         | CHARA<br>POT.<br>POT.                        | SPP.<br>GRAMINEUS<br>RICHARDSONI<br>RICHARDSONI<br>ANEDRA AMED                          | 163.1<br>34.3<br>7.3<br>4.4                 | 8. 4. 4. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. | 4200                  | 2500 | 9.0                                   | о<br>О  |

L-47

Į.

(1)

L- 48

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

1

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER 19          | ISLAND | BLOCK<br>NO.          | REPLICATE<br>NO. | E LO<br>COORD<br>UPPER | ~ ≔    | DEPTH<br>(FT.)   |  | MACROPHYTE<br>Taxon  | DRY WEIGHT (G/M2)                                       | ASH-FREE L<br>Weight<br>(G/M2) | LIGHT (FOOT | CANDLES)                  | CURRENT(FT.   | ./SEC.)<br>=======<br>BOTTOM |
|-------------------|--------|-----------------------|------------------|------------------------|--------|------------------|--|--|---|--------------------------------|-------------|---------------------------|---|------------------------------|
| ST. CLAIR RUSSELL | JSSELL | -                     |                  | 300040                 | 498651 | O. 60            | P0T.   | NODOSUS<br>NARROW  | 2 2 2 2 2 2 2 2 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | 1.7                            | 2000        | 00-                       |   | 0.3                          |
|                   |        |                       | 7                | 2 309949               | 498651 | ဝ<br>ဝ           | <b>! ≪</b> !   | SPP.<br>NATANS<br>GRAMINEUS<br>NARROW  | 4.0<br>TRACE<br>38.5<br>149.2                           | 1.5<br>30.1<br>127.4           | 2000        | 00-                       | 10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>1 | 0.3                          |
|                   |        | 0<br>0<br>0<br>0<br>1 | • .              | 309949                 | 498651 | O. 6             | P01.   | GRAMINEUS<br>Narrow  | 13.8<br>137.2   | 11.5                           | 2000        | 100                       |   | 0.3                          |
|                   |        | 6                     | •                |                        | 498650 | 0.6              | CHARA<br>POT.  |  | 122.2<br>36.7<br>4.7                                    | 42.9<br>29.7<br>3.8            | 2700        |                           | ø.<br>-   | 4.0                          |
|                   |        |                       | 6                | 309940                 | 498    | o.               | CHARA<br>POT.  | SPP.<br>GRAMINEUS<br>NARROW  | 129.3<br>54.7<br>28.8                                   | 48.1<br>42.1<br>1.3            | 2700        | 950                       | ii 00   | 4.0                          |
|                   |        | #<br>#<br>#<br>#      | (C)              | 309940                 | 498650 | 0.0              | CHARA<br>POT.  | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW                                      | 235.8<br>55.7<br>1.2                                    | 86<br>43.0<br>43.0             | 2700        | ට<br>ග                    | o.<br>-   | 0<br>4.                      |
|                   |        | 6                     | 1                |                        | 9      | <b>6</b> 0       | ELODEA CAI<br>POT. RICHA<br>POT. NARRO<br>NITELLOP.  | ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW<br>NITELLOP. OBTUSA           | 20.9<br>42.2<br>32.8<br>57.3                            | 15.2<br>35.2<br>27.3<br>29.4   | 1500        | 330                       | 0.2   | 0.1                          |
|                   |        |                       | 8                | 309970                 | 498660 | <b>8</b> 0.      | ELODEA<br>NITELLA<br>POT. RI<br>POT. NA              | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW            | ສ.ຄ<br>ສ.7.3<br>90.9                                    | 4.0<br>2.8<br>30.7<br>76.3     | 1500        | 330                       | 0.2   | o<br>-                       |
|                   |        |                       | n                | 3 309970               | 498660 | <b>6</b> 0<br>O: | CHARA SPP.<br>ELODEA CAN<br>POT. NODOS<br>POT. NARRU | CHARA SPP.<br>ELODEA CANADENS<br>POT. NADOSUS<br>POT. NARROW<br>NITELLOP. OBTUSA | 6.0<br>6.0<br>80.0<br>80.0                              | 0.0<br>0.0<br>102.1<br>38.4    | 1500        | 030                       | 0.2   | o<br>                        |
|                   |        |                       | 4                | 309968                 | 498659 | 0.1.0            | ELODEA<br>MYRIO.                                     | S &  | 158.4<br>O.5  | 117.1<br>0.5                   | 3100        | 1100                      | O.3   | 0.1                          |
|                   |        |                       | * *              | 309968                 | 498659 | 0.1              | ELODEA   |  | 137.6   | 97.0                           | 3100        | 1100                      | 0.3   | 0.1                          |
|                   |        |                       | ဖ                | 309968                 | 498659 | 0. =             | ELODEA<br>MYRIO.<br>Pot. G                           | 4 . 0  | 143.6<br>0.6<br>0.7                                     | 1.0<br>1.0<br>1.0<br>1.0       | 3100        | <del>1</del><br>00<br>100 |   | 0. 1                         |
|                   |        | 4                     | 309055           | 309955                 | 498659 | 7.0              | CHARA<br>POT.<br>POT.<br>VALLI                       | CHARA SPP. POT. NATANS POT. GRAMINEUS VALLISNERIA AMER                           | 65.7<br>77.0<br>108.2<br>15.7                           | 22.6<br>52.8<br>78.7<br>9.6    | 1500        | ហ                         | o.<br>8   | 0<br>-                       |

|             | 2 309955 4 | 498659 | o. <b>,</b>     | POT<br>POT<br>VALLI            | CHARA SPP.<br>POT. NATANS<br>POT. GRAMINEUS<br>VALLISNERIA AMER   | 3.7<br>68.2<br>89.0<br>7.8   | 1.3<br>57.1<br>71.0<br>6.1   | 1500             | ហ   | ю.<br>О      |       |
|-------------|------------|--------|-----------------|--------------------------------|---|------------------------------|------------------------------|------------------|---|--------------|-------|
| ,<br>,<br>, | H I        | 498659 | # O.            | CHARA<br>POT.<br>POT.<br>VALLI | CHARA SPP. CHARA SPP. POT. NATANS POT. GRAMINEUS VALLISNERIA AMER | 22.2<br>71.5<br>40.5         | 7.9<br>57.8<br>31.1          | 1500             |   | . O          | 0.1   |
| ر<br>د      | 309950 4   | 498657 | 0.              | CHARA<br>ELODE/<br>POT. (      | CHARA SPP.<br>ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. NARROW    | 1.8<br>17.8<br>156.0<br>64.0 | 0.6<br>14.7<br>120.5<br>53.9 | 820              | 25  | e . 0        | 0.4   |
| # C1        | 2 30995U 4 | 498657 | 7.0             | CHARA<br>POT.<br>POT.          | SPP.<br>GRAMINEUS<br>NARROW                                       | 2.5<br>69.4                  | 56.5<br>- 2.0                | 820              | 2. S. |              | 0.4   |
|             | <b>)</b>   | 498657 | 7.0             | CHARA<br>ELODEA<br>POT. G      | A SPP. CANADENS GRAMINEUS NARROW                                  | 6.9<br>119.1<br>31.0         | 2.5<br>0.7<br>25.0<br>25.0   | 8 02 0 H         | 2   | . O          |       |
| 9           | 309944 4   | 498658 | 7.0             | CHARA<br>POT.<br>POT.          | , SPP.<br>Gramineus<br>Narrow                                     | 53.8<br>119.9<br>47.5        | 15.7<br>84.8<br>39.3         | 2500             | 1500.                                     |              | 9.0   |
| 8           | 309944 4   | 498658 | 7.0             | CHARA<br>POT.<br>POT.          |   | TRACE<br>222.7<br>39.4       | 182.1<br>32.4                | 2500             | 1500                                      |              | 9.0   |
|             |            | 498658 | 7.0             | CHARA<br>POT.                  | SPP.  | 6.5<br>116.5                 | 2.0<br>94.3                  | 2500             | 1500                                      |              | 9.0   |
|             | 309968     | 498664 | 0.4             | P0T.                           | GRAMINEUS<br>RICHARDSONI<br>NARROW                                | 71.5<br>55.1<br>54.9         | 50.8<br>40.1<br>46.0         | 2000             | 1500                                      | Q<br>10.     | 0.1   |
| 10 1        |            | 498664 | 0.4<br>0        | EL 00E<br>POT.<br>POT.         |   | 2.0<br>117.7<br>100.7        | 88.0<br>8.0<br>8.0<br>8.0    | 2000             | 1500                                      | o.s          | 0.1   |
|             | 3 309968   | 498664 | 0.4             |                                | NODOSUS<br>RICHARDSONI<br>NARROW                                  | 6.9<br>139.3<br>153.6        | 5.5<br>105.2<br>127.7        | 2000             | 1500                                      | O<br>R       | 0<br> |
|             | 1 309963 4 | 498663 | 4.0             | -                              | A SPP.<br>GRAMINEUS<br>NARROW                                     | 11.1<br>63.3<br>107.0        | 4.0<br>93.4                  | 1000             | 250                                       |              | 9.0   |
|             | 2 309963 4 | 498663 | 0.4             | CHARA<br>POT.<br>POT.          | A SPP.<br>GRAMINEUS<br>NARROW                                     | 4.3<br>31.1<br>167.8         | 1.4<br>25.0<br>144.4         | 1000             | 250                                       | <del>-</del> | 9. O  |
| н (C)       | 3 309963 4 | 498663 | 0. <del>4</del> | CHARA<br>POT                   | A SPP.<br>Gramineus<br>Narrow                                     | 7.0<br>26.9                  | 2.5<br>21.7                  | <del>1</del> 000 | . 250                                     |              | 9.0   |

| 4   | 4 309961 |            | 0.4         |   | 95.3                         | 32.7                         |                          | 1900 | 8.0             | 0.7 |
|-----|----------|------------|-------------|---|------------------------------|------------------------------|--------------------------|------|-----------------|-----|
| ស   | 309961   |            | 4<br>0      |   | 396.7<br>3.2                 | 128.0<br>2.3                 |                          | 1900 | <b>co</b> .     | 0.7 |
| 9   | 6 309961 |            | 4.0         |   | 257.7                        | 91.3                         | 2900                     | 1900 | <b>89</b> .     | 0.7 |
| -   | 1 309954 | 498664 4.0 |             |   | 189.1<br>1.5<br>76.4<br>18.4 | 65.8<br>1.0<br>56.9          | 65.8 3000<br>1.0<br>15.4 | 2000 | <b>9</b> .0     | 0.2 |
| 6   | 2 309954 | 498664     | 6.<br>0.    | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS<br>POT. NARROW   | 144.8<br>0.5<br>32.5<br>84.2 | 50.3<br>0.4<br>70.3          | 3000                     | 2000 | <b>9</b> .<br>O | 0.2 |
| 6   | 3 309954 | 498664     | <b>6</b> .  | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW<br>VALLISNERIA AMER | 30.6<br>75.3<br>211.0<br>0.3 | 10.5<br>57.5<br>181.7<br>0.1 | 3000                     | 2000 | 9.<br>O         | 0.2 |
| 4   | 4 309950 | 498662     | 0.4         | CHARA SPP.  | 136.8                        | 43.8                         | 3100                     | 2000 | o.6             | 0.2 |
| ED. | 309950   |            | 0.4         |   | 205.5<br>2.3                 | 69.6<br>1.7                  | 3100                     | 2000 | <b>9</b> .0     | 0.2 |
| 9   | 036608   | 498662     | <b>4</b> .0 | CHARA SPP.<br>POT. GRAMINEUS                                    | 213.2<br>1.2                 | 71.9                         | 3100                     | 2000 | 9·0             | 0.2 |

I

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND | BLOCK R<br>NO. | <b>.</b>                             | PLICATE LORA<br>NO. COORDIN<br>UPPER | RAN<br>INATES<br>LOWER | DEPTH<br>(FT.)  | ∝ ⊢ ∗   | DRV WEIGHT (G/M2)      | ASH-FREE L<br>WEIGHT<br>(G/M2) | SURFACE | CANDLES) | CURRENT(FT | ./SEC.)<br>BOTTOM |
|--------------|----------------|--------------------------------------|--------------------------------------|------------------------|-----------------|---|------------------------|--------------------------------|---------|----------|------------|-------------------|
| BELLE        | -              | ÷ !                                  | 1 312756 4                           | 499946                 | 0.0             | CHARA SPP. POT. RICHARDSONI VALLISNERIA AMER        | TRACE<br>135.4<br>51.0 | 6.801<br>8.50<br>8.35          | 2900    | 4        | 9.0        | 0.0               |
|              |                | 8                                    | 2 312756                             | 499946                 | o,<br>80        | POT. RICHARDSONI<br>VALLISNERIA AMER                | 48.8<br>60.5           | 38.0<br>41.7                   | 2900    | 4        | 9.0        | 0.0               |
|              |                | е                                    | 312756                               | 4999                   | <b>6</b> 0      | POT. RICHARDSONI<br>VALLISNERIA AMER                | 152.3                  | 112.5<br>9.3                   | 2900    | 4 4      | 9.0        | 0.0               |
|              | 7              |                                      | 312765                               | 499956                 | 0.6             | VALLISNERIA AMER                                    | 95                     | 22.8                           | 3100    | 150      |            | 0.7               |
|              |                | 7                                    | 312765                               | 1 📆                    | 0.6             | ₹ :   | 67.4                   | 41.0                           | 3100    | 150      |            | 0.7               |
|              | 1              | ဇ                                    | 312765                               | 499956                 | O<br>60         |   | 9.4<br>9.10            | 2.0<br>53.8                    | 3100    | 150      |            | 0.7               |
| •            | е              | ) (                                  | 312777                               | 499962                 | εο<br>τυ        |   | 310.0<br>16.6          | 4.0<br>4.0<br>4.0              | 3500    | 31       | e.<br>0    | 0.1               |
|              |                | 2                                    | 2 312777                             | 499962                 | න<br>ග          | POT. RICHARDSONI<br>VALLISNERIA AMER                | 51.4                   | 35.6<br>54.7                   | 3500    | 3.1      | 0.3        | 0.4               |
|              |                | က                                    | 312777                               | 499962                 | න<br>හ          | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 220.0<br>12.9<br>28.0  | 134.0<br>10.3<br>17.9          | 3500    | 31       | e. 0       | 0.1               |
|              | 4              | 4 1 312785                           | 312785                               | 499969                 | to.5            | P.<br>RIA AI  | 1.6<br>25.6            | 9.6<br>16.6                    | 4500    | 340      |            | 0.7               |
|              |                | 2                                    | 2 312785                             | H 4                    | , i             |   | 81.2                   | 51.0                           | 4500    | 340      |            | 0.7               |
|              | 1              | # 6<br># 60                          | 312785                               | 499969                 | 10.5            | VALLISNERIA AMER                                    | 114.0                  | 75.5                           | 4500    | 340      |            | 0.7               |
| -            | W)             | !<br>!                               | 312802                               | 10                     | O.<br><b>so</b> | S FLEXIL<br>RICHARD<br>ISNERIA                      | 14.4<br>60.4<br>11.8   | 8.7<br>45.7<br>66.0            | 4200    | <b>6</b> | 0.2        | 0.1               |
|              |                | H C                                  | )                                    | 499978                 | o.<br>80        | RICHARDS<br>LISNERIA A                              | 244.6                  | 165.6<br>29.6                  | 4200    | H 40     | 0.2        | . 0               |
|              |                |                                      | 312802                               | 499978                 | O.<br>60        | POT. RICHARDSONI<br>VALLISNERIA AMER                | 165.5                  | 101.5                          | 4200    | 6        | 0.2        | 0.1               |
|              | H 40           | # 1<br># 1<br># - 1<br># - 1<br># !  | 312808                               | 499983                 | -<br>0. E       | CHARA SPP. VALLISNERIA AMER                         | TRACE<br>103.3         | 0.89                           | 1000    | 130      | 4.         | 6.0               |
|              |                | h  <br>N                             | 312808                               | 499983                 | -<br>-          | VALLISNERIA AMER                                    | 152.9                  | 0.88                           | 1000    | 130      | 4.4        | 6.0               |
|              |                | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | 312808                               | 3 312808 499983        | 1.0             | VALLISNERIA AMER                                    | 120.3                  | 82.4                           | 0001    | 130      | 4.1        | 6.0               |

| <del>-</del>                          | # <del>-</del>  | H  | 0  | 0.                  | 0   | 0.  | 0  | 0   | # <del>-</del>                      | #<br>#<br># -   | #<br>#<br>#<br># —                                    | H<br>H<br>H   |
|---------------------------------------|---|--|--|---------------------|---|---|--|---|-------------------------------------|---|---|---|
| ó                                     | Ö   | .0   | . O  | Ö                   | Ö   | Ö   | Ö  | Ö   |                                     | Ö   | Ö   | ·   |
| 0<br>4                                | 4.0   | 4.0  |  | 0                   |   | 0.0   | 0.0  |   | 0.4                                 | 0.1   |   | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                   |
| 45                                    | 45  |  | 009  | 009                 |   | 0 4 4 0 0 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                 | 0 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4                              | 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0                                 | 400                                 | 400   | 400 A   |   |
| 2000                                  | 2000  | 2000   | 3500<br>3500   | 3500                | . 0   | 4600  | 4600   | 4600  | 3600                                | 3600  | 3000 mm   | 1100  |
| 32.9<br>25.4                          | 22.8<br>38.6<br>38.6<br>4.6   | 0.1<br>80.4<br>20.4  | 8 4 0 0 4 4 4 5 6 5 6 5 6 5 6 5 6 5 6 5 6 6 6 6  | 65.7<br>12.4<br>3.0 | 46.0<br>11.4<br>18.4                                    | 7.3<br>0.1<br>10.1<br>65.8  | 23.5<br>59.8<br>26.7   | 4<br>6. 0<br>6. 0   | 176.6                               |   |   | 0.5   |
| TRACE<br>53.6<br>53.7                 | 36.7<br>37.1<br>54.4<br>78.8  | 3.8<br>0.2<br>126.6<br>33.4                                  | 2.2<br>0.7<br>122.9<br>20.3<br>47.9  | 1.3<br>20.9<br>8.8  | 128.3<br>18.7<br>31.3                                   | 10.3<br>18.3<br>193.9   | TRACE<br>41.5<br>204.4<br>45.8                                       | 2.0<br>4.7<br>9.8<br>288.5  | 229.4<br>35.6                       | 18 18 18 18 18 18 18 18 18 18 18 18 18 1                | H • • • (   | 0.6<br>TRACE<br>0.4<br>219.9  |
| HARA SPP.<br>OT. RICHAR<br>ALLISNERIA | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>VALLISNERIA AMER | CHARA SPP. ELODEA CANADENS POT. RICHARDSONI VALLISNERIA AMER | MYRIO. SPICATUM<br>NAJAS FLEXILIS<br>NITELLA HYALINA<br>POT. RICHARDSONI<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | . HZO               | NITELLA HYALINA<br>POT. RICHARDSONI<br>VALLISNERIA AMER | MYRIO SPICATUM<br>NAJAS FLEXILIS<br>VALLISNERIA AMER<br>NITELLOP OBTUSA | CHARA SPP.<br>MYRIG. SPICATUM<br>NITELLA HYALINA<br>VALLISNERIA AMER | MYRIO SPICATUM<br>NAJAS FLEXILIS<br>VALLISNERIA AMER<br>NITELLOP OBTUSA | MYRIO. SPICATUM<br>VALLISNERIA AMER | MYRIO. SPICATUM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | MYRIO SPICATUM<br>VALLISNERIA AMER<br>NITELLOP OBTUSA | MYRIO SPICATUM<br>NAVAS FLEXILIS<br>VALLISNERIA AMER<br>NITELLOP OBTUSA |
| <b>8</b> 0 · 0                        | о<br>6  | # O  | 4<br>O   | <b>4</b><br>0       | 4<br>0  | 7.0   | 0.7  | 7.0   | 0.9                                 | 9   | 0.9   |   |
| 499987                                | 499987  | 499987   | 49999  | 499991              | <u> </u>  | 499994  | 400004   | 666   | 499991                              | 499991  | 499991  | 499991  |
|                                       |   |  |  |                     | 312851  | 4 312852 4  | 5 312852 4   | 6 312852 4  | 8 1 312837 4                        | 312837 4  | 312837 4  | 312841 4  |
| 4                                     | ស   | ဖ  | -  | 8                   | က   | 4   | រភ   | ဖ   | *                                   | N (   |   | 4   |
|                                       |   |  | _  |                     |   |   |  |   | 60                                  |   |   |   |

|   | വ                          | 312841            | 499991        | 5.5           | MYRIO. SPICATUM<br>NITELLOP. OBTUSA  | 11.6<br>262.0                       | 8.2<br>92.9                               | 100  | 330                                   | 0.2   | 0.1         |
|---|----------------------------|-------------------|---------------|---------------|--|-------------------------------------|---|------|---------------------------------------|-------|-------------|
|   | ဖ                          | 6 312841 4        | 499991        | i O           | MYRID. SPICATUM<br>NITELLA HYALINA<br>VALLISNERIA AMER                     | 448.2                               | 0.8<br>141.8                              | 00   | M M M M M M M M M M M M M M M M M M M |       | <b>0</b> .1 |
|   |                            | 9 1 312831 499989 | 312831 499989 |               |  | 8.0<br>1.6<br>161.5                 | 3.0<br>1.0<br>79.2                        | 3900 | 2300                                  | # 4.0 | 0.5         |
|   | 2                          | 2 312831 4        | 499989        |               |  | 51.1<br>51.8                        | 33.2<br>18.8                              | 3900 |                                       | 4.0   | 0.2         |
|   | 6                          | 3 312831 4        | 666           |               | CHARA SPP.<br>VALLISNERIA AMER   | 48.2<br>205.2                       | 19.4                                      | 3900 | #<br>#                                | 4.0   | 0.2         |
|   | H 4                        | 4 312833 4        | 499991        | # O. 7        | MYRIO. SPICATUM<br>VALLISNERIA AMER  | 129.1                               | 101.9<br>10.0                             | 4200 | # # # # # # # # # # # # # # # # # # # |       | 0.1         |
|   |                            | 5 312833 4        | 499991        | 7.0           | MYRIO. SPICATUM<br>VALLISNERIA AMER  | 153.7<br>6.6                        | 115.5                                     | 4200 | 490                                   | 0.2   | - · o       |
|   | g                          | 6 312833 4        | 499994        | 7.0           | MYRIO. SPICATUM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                    | 123.5<br>1.4<br>34.8                | 95.9<br>1.0                               | 4200 | 490                                   | 0.2   | 0.4         |
| ō | R<br>M<br>H<br>H<br>R<br>F | 1 312821 4        | 499987        | <b>4</b><br>0 | FLEXI<br>LA HYA<br>GRAMIN<br>RICHAR<br>SNERIA<br>LOP. 0                    | 1,0<br>61.1<br>7.1<br>14.4<br>6.2   | 0 7 8 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 | 4500 | 2 100                                 | 7.0   | 6.<br>0     |
|   | E C                        | 2 312821 4        | 499987        | 0.4           | <b></b> -  | 13.1<br>TRACE<br>2.6<br>0.7<br>82.1 | 4 . 8<br>0 . 3<br>24 . 3                  | 4500 | 2100                                  | 0.7   | ო<br>0      |
|   |                            | 3 312821 4        | 312821 499987 | <b>6</b> .    | POT. GRAMINEUS<br>POT. RICHARDSONI<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | 63.3<br>5.6<br>12.3<br>82.9         | 42.8<br>3.2<br>8.6<br>37.2                | 4500 | 2 100                                 | 0.7   |             |

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

HENNEPIN

DETROIT

ISLAND

RIVER

外认为你们也们们的现在分词,我们还是没有的,我们们们们们的自己的,我们们们们们的,我们们们们们的的,我们们们们的现在分词,我们就是这个人的,我们们们们们的现在分词,我们 ASH-FREE LIGHT(FOOT CANDLES) CURRENT(FT./SEC.) SURFACE BOTTOM ٠. د. ÷. ٥. <u>-</u> <del>-</del> <del>-</del> ٠. ٥ ٥. <del>-</del> ---٠ ٥ ٠. د <del>-</del> -0.5 7.0 0.5 0.1 0.5 0.5 0.5 0 0.5 7.0 7.0 0.0 NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2 SURFACE BOTTOM 250 250 4 10 410 170 170 240 240 240 410 8 8 8 20 500 500 45 4 13 8 8 8 18.8 2100 45.8 2100 15.6 2100 17.9 2700 1.5 2300 2500 73.3 2700 2700 2700 2700 3400 3400 33.4 1100 28 60.9 2300 48.1 2300 2500 2500 2700 3100 318 358 3400 500 83.1 1100 123.3 47.8 13.3 32.6 91.3 65.4 28.7 21.3 44.8 71.6 89.5 21.4 37.7 38.55 8 80.5 3.6 21.3 WE I GHT (G/M2) DRY WEIGHT 149.1 42.0 9.02 98.1 66.1 74.1 141.5 86.1 42.1 103.3 76.5 101.9 187.4 151.4 207.3 37.6 93.5 25.6 37.3 134.5 116.8 68.3 (G/M2) 314074 500682 5.0 VALLISNERIA AMER 314088 500692 6.0 VALLISNERIA AMER 314074 500682 5.0 VALLISNERIA AMER 314074 500682 5.0 VALLISNERIA AMER 314084 500702 5.0 VALLISNERIA AMER 314064 500669 5.0 VALLISNERIA AMER 314064 500669 5.0 VALLISNERIA AMER 314064 500669 5.0 VALLISNERIA AMER 314067 500675 6.0 VALLISNERIA AMER 314067 500675 6.0 VALLISNERIA AMER 314088 500692 6.0 VALLISNERIA AMER 314070 500686 6.0 VALLISNERIA AMER 314070 500686 6.0 VALLISNERIA AMER 314070 500686 6.0 VALLISNERIA AMER 314078 500695 5.0 VALLISNERIA AMER 314078 500695 5.0 VALLISNERIA AMER 314078 500695 5.0 VALLISNERIA AMER 314095 500702 6.0 VALLISNERIA AMER 314095 500702 6.0 VALLISNERIA AMER 314095 500702 6.0 VALLISNERIA AMER 314084 500702 5.0 VALLISNERIA AMER 314084 500702 5.0 VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER MYRIO, SPICATUM MACROPHYTE POT. NARROW 314088 500692 6.0 CHARA SPP 314067 500675 6.0 9.0 DEPTH (FT.) 314079 500707 UPPER LOWER COORDINATES REPLICATE BLOCK ທ 9

VALLISNERIA AMER

|  |   | 00 874078 00                             | 500707        | o. <b>9</b>   | MYRIO. SPICATUM<br>VALLISNERIA AMER                    | 179.8<br>10.4         | 6.5                 | 1200         | 260             | 0.5             | 0.5               |
|--|---|--|---------------|---------------|--|-----------------------|---------------------|--------------|-----------------|-----------------|-------------------|
|  |   | 314079 50                                | 500707        | o.<br>9       | MYRIO. SPICATUM<br>VALLISNERIA AMER                    | 207.9<br>4.3          | 97.6<br>2.6         | 1200         | 560             | 0.2             | 0.2               |
|  | :                                       | , ,                                      | 500702        | 5.0           | RICHARD<br>NARROW<br>ISNERIA                           | 272.1<br>0.9<br>1.2   | 200.6<br>0.6<br>0.8 | 3800         | 020             | 0.2             | 0.0               |
|  | <b>6</b> 0                              | 314                                      | 500702        | <b>5</b> .0   |  | 143.8<br>76.8         | 102.5               | 3800         | 650             | 0.2             | - · ·             |
|  | <b>o</b>                                | 314076 50                                | 500702        | ю<br>О.       | MYRIO. SPICATUM<br>POT. RICHARDSONI                    | 3.9<br>226.9          | 3.4                 | 3800         | 650             | 0.2             | ~ · o             |
|  | <b>0</b>                                | 314078 50                                | 500705        | 3.0           | POT. NARROW  | 140.9                 | 100.3               | 1800         | 1600            | 0.1             | 0.0               |
|  | -                                       | 11 314078 50                             |               | 9.0           | POT. NARROW  | 363.7                 | 226.0               | <b>18</b> 00 | 1600            | 0.1             | 0.0               |
|  | 12                                      | 314078 50                                |               | 3.0           | POT. NARROW  | 109.3                 | 80.8                | 1800         | 1600            |                 | 0.0               |
| 0                                      | -                                       | 9 1 314094 50                            | 500711        | O.            | CHARA SPP.<br>VALLISNERIA AMER                         | 0.6<br>40.6           | 0.2                 | 3600         | 2200            | 0.2             | 0.2               |
|  | 2                                       | 2 314094 50071                           | 500711        | <b>4</b><br>0 | CHARA SPP. VALLISNERIA AMER                            | 6.0<br>83.0           | 0.3<br>12.6         | 3600         | 2200            | 0.2             | 0.2               |
|  | 9                                       | 3 314094 50                              | 500711        | 0.4           | VALLISNERIA AMER                                       | 60.0                  | 37.4                | 3600         | 2200            | 0.2             | 0.2               |
| 9                                      |   | 10 11 10 10 10 10 10 10 10 10 10 10 10 1 | 500717        | 7.5           | RANTHERA   | 15.3                  | 9.9                 | 3600         | 1000            | 0.4             | 0                 |
|  | 7                                       | 2 314101 50071                           | 500717        | 7.5           | HETERANTHERA DUB                                       | 3.2                   | 1.7                 | 3600         | <del>0</del> 00 | 0.1             |                   |
|  | က                                       | 3 314101 50                              | 314101 500717 | 7.5           | CHARA SPP.<br>VALLISNERIA AMER                         | 1.4                   | 0<br>4.0            | 3600         | 1000            | - · o           |                   |
| =                                      | -                                       | 11 1 314088 50                           | 5007 17       | O. <b>8</b>   | HETERANTHERA DUB                                       | 2.2                   | 7.9<br>15.3         | 3700         | 130             | o . 1           | -<br>-<br>-       |
|  | 7                                       | 314088 50                                | 5007 17       | O. 82         | CHARA SPP. VALLISNERIA AMER                            | 2.0<br>102.4          | 0.8<br>14.7         | 3700         | 130             | o. <del>1</del> | <del>-</del><br>0 |
|  | 0                                       | 3 314088 50                              | 500717        | <b>6</b> 0    | VALLISNERIA AMER                                       | 40.2                  | 19.4                | 3700         | 130             | 0<br>- 0        | <del>-</del><br>0 |
|  | 4                                       | 314086 50                                | 5007 16       | 7.0           | POT. NARROW<br>VALLISNERIA AMER                        | 124.9<br>39.9         | 34.6<br>10.6        | <b>6</b> 00  | 25              | e. 0            | •<br>•            |
|  |   | 314086 50                                | 5007 16       | 7.0           | POT. NARROW<br>VALLISNERIA AMER                        | 128.9<br>50.2         | 35.4<br>26.2        | <b>4</b> 000 | 25              | e0              | 0.1               |
| !                                      | <b>K</b> .                              | 314086 50                                | 5007 16       | 7.0           | POT. NARROW<br>VALLISNERIA AMER                        | 91.2<br>57.0          | 22.6<br>30.6        | 4000         | 25              | e. 0            |                   |
| 42 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | #                                       | 314099 50                                | 500726        | 0.9           | NAJAS FLEXILIS<br>POT, RICHARDSONI<br>VALLISNERIA AMER | TRACE<br>1.4<br>123.4 | 1.0                 | 1500         | 500             | O . vs          | 0.2               |
|  | 2 | 2 314099 50                              | 500726        | 6.0           | VALLISNERIA AMER                                       | 6.00<br>93.5          | 173.9               | 1500         | 200             | 0.5             | 0.2               |

|                       | e        | 314000          | ROOTSE |          | į        | 14.00 0000000000000000000000000000000000              | M 化 K K K K K W M |  |                    |           |                                       |     |     |
|-----------------------|----------|-----------------|--------|----------|----------|---|-------------------|--|--------------------|-----------|---------------------------------------|-----|-----|
| 1                     |          |                 |        |          |          | CHAKA SPP. HETERANTHERA DUB VALLISNERIA AMER          | A DUB             | TRACE<br>0.3<br>44.5                   | 0.2                | 500       | 200                                   | o.s | 0.5 |
| 13                    | -        | 1 314100        |        | 8<br>O.  | <u> </u> | RICHARDSONI<br>NARROW                                 | SONI              | 88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 17.4               | 2400      | 210                                   | 9.0 | 0.0 |
|                       | 6        | 2 314100        | 500733 | O .      | •        | POT. RICHARDSONI<br>VALLISNERIA AMER                  | SONI              | 43.5<br>TRACE                          | 19.6               | 2400      | 210                                   | 0.6 | 0.0 |
|                       | 6        | 3 314100 500733 | 50073  | 9.8      |          | POT. RICHARDSONI                                      | INOS              | 24.2                                   | 18.7               | 2400      | 210                                   | 0.6 | 0.0 |
|                       | 4        | 4 314103        | 500732 | 0.6      |          | VALLISNERIA AMER                                      | AMER              | 127.1                                  | 55.0               | 55.0 3500 | 15                                    | 0.1 | 0.2 |
|                       | 20       | 5 314103        | 500732 | 0.6      | VALL     | VALLISNERIA AMER                                      | AMER              | 55.2                                   | 9.7                |           | 15                                    | 0.4 | 0.2 |
| 1<br>1<br>1<br>1<br>1 | 9        | 6 314103        |        | 0.0      |          | ELODEA CANADENS<br>NAJAS FLEXILIS<br>VALLISNERIA AMER | ENS<br>1S<br>AMER | 1.8<br>0.3<br>40.1                     | 4.2<br>0.2<br>23.3 | 3500      | # # # # # # # # # # # # # # # # # # # | 0.1 | 0.2 |
| 4                     | - 1      | 1 314108        |        | 0.<br>8. | : :      | VALLISNERIA AMER                                      | AMER              | 60.4                                   | 27.9               | 2000      | 120                                   | 0.3 | 0.1 |
|                       | 2        | 2 314108        |        | _ ;      | VALL     |   | AMER              | 109.6                                  | 47.8               | . 4       | 120                                   | 0.3 | 0.1 |
|                       | <b>m</b> | 314108          |        |          | VALL     | 8.0 VALLISNERIA AMER                                  | AMER              | 56.6                                   | 13.0               | 2000      | 120                                   | 0.3 | 0.1 |

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| BLOCK REP<br>NO. N | REPLICATE<br>NO. | LORA<br>COORDIN<br>UPPER | N D<br>LATES (<br>LOWER | (FT.)       | MACROPHYTE<br>TAXON<br>VALLISNERIA AMER | (G/M2)         | ASH-FREE L<br>WEIGHT<br>(G/M2) | LIGHT (FOOT<br>SERFACE<br>SURFACE<br>2300 | CANDLES) | CURRENT (FT      | ./SEC.) BOTTOM |
|--------------------|------------------|--------------------------|-------------------------|-------------|---|----------------|--------------------------------|---|----------|------------------|----------------|
| 2                  | . 1              | 314223 500               | 500981                  |             |   | 131.3          | 80 4 . 4                       | 2300                                      | 5.1      | 0.7              | 0.0            |
| 3                  |                  | 314223 500               | 500981                  | 7.0         | VALLISNERIA AMER                        | 160.6          | 120.0                          | 2300                                      | 51       | 0.7              | 0.0            |
| -                  |                  |                          | 92600                   | 0.9         | POT. NARROW<br>VALLISNERIA AMER         | 0.6            | 0.5<br>62.0                    | 2100                                      | 180      | o<br>8           | 0.3            |
| 2                  |                  | 2 314217 500             | 92600                   | 0.9         | VALLI SNERIA AMER                       | 156.4          | 92.8                           | 2 100                                     | 180      | 0.5              | 0.3            |
| 6                  |                  |                          | 00976                   | 0<br>9      | VALLISNERIA AMER                        | 205.0          | 105.4                          | 2100                                      | 180      | 0.5              | 0.3            |
| -                  |                  | 1 314205 500             | 97600                   |             | PICAT<br>RIA                            | 27.4<br>142.7  | 16.1<br>94.3                   | 1500                                      | ဖ        | o.s              | 0.4            |
| ~                  |                  | 314205 500               | 92600                   | 0.9         | MYRIO. SPICATUM<br>VALLISNERIA AMER     | 130.4<br>150.2 | 91.7<br>94.7                   | 1500                                      | σ        | 0.5              | 0.1            |
|                    |                  |                          | 90976                   | <b>0</b> .9 | MYRIO. SPICATUM<br>VALLISNERIA AMER     | 287.3<br>104.5 | 206.5<br>51.7                  | 1500                                      | 9        | o.s              | 0.1            |
|                    | (n)              | 314199 500               | 00975                   | <b>6</b> .0 | MYRIO. SPICATUM<br>Vallisneria amer     | 125.8          | 92.8                           | 1800                                      | 230      | 0.5              | 0.2            |
| 2 314199 5         | <b>.</b> .       |                          | 00975                   | 0.9         | MYRIO. SPICATUM<br>Vallisneria amer     | 57.9<br>140.2  | 40.1<br>133.4                  | 1800<br>0081                              | 230      | O                | 0.2            |
| 3 314189 5         | e i              |                          | 00975                   | O. 9        | MYRIO. SPICATUM<br>Vallisneria amer     | 169. 1<br>58.8 | 108.6<br>32.6                  | 1800                                      | 230      | o.o              | 0.2            |
| 1 314217 5         | 6                |                          | 00983                   | 6.0         | VALLISNERIA AMER                        | 34.8           | 18.5                           | 2900                                      | 150      | 0.8              | 0.1            |
| 2 314217 5         | Ö                |                          | 00983                   | 0.9         | VALLISNERIA AMER                        | 96.1           | 200                            | 2900                                      | 150      | <b>6</b> .0      | o<br>- •       |
| 3 314217 5         | 6                | 314217 500               | 500983                  | 0.9         | VALLISNERIA AMER                        | 107.8          | 59.2                           | 2900                                      | 150      | <b>8</b> .0      | 0.1            |
| 1 314220 5         | <b>.</b>         |                          | 00983                   | 2.0         | ELODEA CANADENS<br>VALLISNERIA AMER     | 0.4<br>198.8   | 0.3<br>115.7                   | <del>1</del> 00                           | 210      | o . <del>1</del> | 0.0            |
| 3                  |                  | 314220 500               | 00983                   | 2.0         | MYRIO. SPICATUM<br>Vallisneria amer     | 1.2<br>192.0   | 0.8<br>113.2                   | <del>1</del> 00                           | 210      | 0.1              | 0.0            |
|                    | . (7)            |                          | 00983                   | 2.0         | VALLISNERIA AMER                        | 157.4          | 8.80                           | 1100                                      | 210      | 0.1              | 0.0            |
| -                  | ,                |                          | 06600                   | 2.5         | MYRIO. SPICATUM<br>Vallisneria amer     | 53.6<br>TRACE  | 40.0                           | -<br>-<br>-<br>-                          | 270      | o . 3            | 0.2            |
| 2                  |                  |                          | 06600                   | 2.5         | HETERANTHERA DUB<br>Myrio. Spicatum     | 2.8<br>301.3   | 2.0<br>240.1                   | <del>1</del> 000                          | 270      | O.3              | 0.2            |
|                    |                  | 314235 500               | 06600                   | 2.5         | HETERANTHERA DUB                        | 8 · 9          | 7 · 4                          | 1000                                      | 270      | 0.3              | 0.2            |

|          |  |  |        |            | MYRID. SPICATUM   | SPICA                             | FUM               | 169.2                     | 116.6              | 1    | 11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11 |      | *************************************** |
|----------|--|--|--------|------------|---|-----------------------------------|-------------------|---------------------------|--------------------|------|--|------|---|
| <b>6</b> | 1.<br>11<br>12<br>13<br>14<br>14<br>17 | 8 1 4227                               | 500990 | 0.         | ELDDEA CANADENS HETERANTHERA DUB MYRIO. SPICATUM POT. CRISPUS | CANADI<br>THERA<br>SPICA<br>ISPUS | ENS<br>DUB<br>TUM | 0.4<br>0.4<br>14.3<br>5.5 | 0,2<br>10,0<br>4.8 | 2500 |  | 0. 1 | 0.1                                     |
|          | 2                                      | 314227                                 | 200990 | 0.4        | HETERANTHERA DUB  | THERA                             |                   | 178.1                     | 134.4              | 2500 | 210  | 0.4  | 0.1                                     |
|          | * * * *                                | 3 314227                               | 500990 | 0.4        | ELODEA CANADENS HETERANTHERA DUB                              | DEA CANADER<br>ERANTHERA (        | ENS               | 1.4<br>260.6              | 1.0<br>188.4       | 2500 | 210  | 0.1  | 0.4                                     |
| 9        |  | 9 1 314244                             | 500996 | 0.4        | 1 2   | SPICA                             | 108<br>108        | 133.8                     | 102.5              | 1600 | 1300   | 0.5  | 0.4                                     |
|          | 2                                      | 2 314244<br>2                          | 500996 | 0,4        | 1   | SPICA                             | TUM               | 377.2                     | 290.7<br>1.5       | 1600 | 1300   | 6.0  | 4.0                                     |
|          | # C                                    | ************************************** | 500996 | 0.4        | HETERANTHERA DUB<br>MYRIG. SPICATUM                           | SPICA                             | DUB               | 324.6                     | 3.0<br>239.1       | 1600 | 1300   | 0.5  | 4.0                                     |
| 0        | # <del>-</del>                         | 10 1 314246                            | 501000 | 2.0        |   | SPICATI                           | TUM               | 0.2                       | 0. †<br>96.8       | 3500 | 8000   | 0.3  | 0.2                                     |
|          | 2                                      | 2 314246                               | 501000 | 2.0        | VALLISNERIA   | NER IA                            | AMER              | 309.2                     | 154.1              | 3500 | 800  | 0.3  | 0.2                                     |
|          | 3                                      | 3 314246                               | 501000 | 2.0        | \AL   | NERIA                             | AMER              | 139.1                     | 83.9               | 3500 | 800  | 0.3  | 0.2                                     |
| =        | -                                      | ************************************** |        | 0.0        | \<br>\<br>\   | LISNERIA                          | AMER              | 117.3                     | 64.8               | 1800 |  | 0.6  | 1 |
|          | 2                                      | 314252                                 |        | 9.0<br>0.0 | >   | NER 1 A                           | AMER              | 158.1                     | 91.8               | 1800 | 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                    | 0.6  | 1 8 H                                   |
|          | #<br>#<br># (*)<br>#                   | 3 314252                               | 501004 | 3.0        | ;   | ILLISNERIA AMER                   | AMER              | 115.5                     | 72.4               | 1800 | 1  | 9.0  | f                                       |

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE # LESS THAN 0.001 G/M2

| RIVER ISLAND   |   | BLOCK<br>NO. | REPLICA<br>NO. | TE LOR<br>COORDI<br>UPPER  | RAN<br>INATES<br>LOWER     | 0EPTH<br>(FT.)                             | MACROPHYTE<br>TAXON  |   | DRY WEIGHT<br>(G/M2)                  | ASH-FREE L<br>WEIGHT<br>(G/M2)                      | LIGHT (FOOT                | CANDLES)          | CURRENT (F1          | F./SEC.)  |
|----------------|---|--------------|----------------|----------------------------|----------------------------|--|--|---|---------------------------------------|---|----------------------------|-------------------|----------------------|---|
| ST. CLAIR STAG | t | -            | - 00           | 309028<br>309028<br>309028 | 497<br>497<br>497          | 22.0<br>20.0<br>20.0                       | 222  | PLANTS<br>PLANTS<br>PLANTS                              | PRESENT<br>PRESENT<br>PRESENT         |   | 8<br>10<br>10              | 330<br>330<br>330 | 0.00                 | 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3           |
|                |   | • (          |                | 309039<br>309039<br>309039 | 444                        | 12.0<br>12.0<br>2.0                        | 222  | PLANTS<br>PLANTS<br>PLANTS                              | PRESENT<br>PRESENT<br>PRESENT         |   | 1100<br>001<br>000<br>1000 | 550<br>550<br>550 | 0.00                 | # 22 22 32 42 42 42 42 42 42 42 42 42 42 42 42 42 |
|                |   |              | - 26           | 309029<br>309029<br>309029 | 444                        | 0.5<br>0.5<br>0.5                          | 222  | PLANTS<br>PLANTS<br>PLANTS                              | PRESENT<br>PRESENT<br>PRESENT         |   | 5 10<br>5 10<br>5 10       | 340<br>340        | 2.2.2<br>0.0.0       | 2.22  |
|                |   | 4            | * - G 6 1      | 309044<br>309044<br>309044 | 444                        | 22.0<br>0.00<br>0.00                       | 222  | PLANTS<br>PLANTS<br>PLANTS                              | PRESENT<br>PRESENT<br>PRESENT         |   | 820<br>820<br>820          | 580<br>580<br>580 | 2.2.2                | 2.22  |
|                |   | មា           | - 0 6          | 309027<br>309027<br>309027 | 497392<br>497392<br>497392 | , , , ,<br>, , , , , , , , , , , , , , , , | 222  | PLANTS<br>PLANTS<br>PLANTS                              | PRESENT<br>PRESENT<br>PRESENT         |   | 000<br>009<br>009          | 8 8 8<br>8 8 8    | 0.00<br>0.00<br>0.00 | 22.2  |
|                |   | ø            | •              | • •                        | 497402                     | <b>6</b><br>0.0                            | CHARA SPP.<br>Pot. Narrov                                    | >   | 35.0<br>35.0                          | 0.2<br>21.5   | 620                        | 580               | 2.6                  | 2.0   |
|                |   |              | 7              | 309042                     | 497402                     | 5.0  |  | NEUS  | 4.6<br>19.3                           | 2.9<br>(2.3   | 620                        | <b>S</b>          | 2.6                  | 2.0   |
|                |   |              | 0              | 309042                     | 497402                     | 5.<br>O                                    | POT. NARROW  |   | 6.2                                   | 0.0   | 620                        | 580               | 2.6                  | 2.0   |
|                |   |              | i i            | 309043                     | 497403                     | о.<br>6                                    | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW                  | NEUS  | 5.8<br>5.8                            | 4 to  | . 2200                     | 1000              | 2.2                  | 1.7   |
|                |   |              | ស              | 5 309043                   | 9                          | 9.0<br>0.0                                 | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW                  | NEUS<br>W   | TRACE<br>23.0<br>2.0                  | 80 T  | 2200                       | 1000              | 2.2                  | 1.7   |
|                |   |              | ဖ              | 309043                     | 497403                     | 9.0  |  | NEUS  | 0.3<br>23.7                           | 0.4<br>14.2   | 2200                       | 1000              | 2.2                  | 1.7   |
|                |   | 7            |                |                            | 497405                     | O.<br>80                                   | CHARA SPP.<br>ELODEA CANADE<br>MYRIO. SPICAT<br>POT. CRISPUS | SPP<br>A CANADENS<br>SPICATUM<br>CRISPUS<br>RICHARDSONI | C C C C C C C C C C C C C C C C C C C | 4 70 0 0<br>6 4 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 3100                       | 520               | <b>6</b> 0           | <b>s</b> .  |
|                |   |              | 7              | 309035                     | 497405                     | O. 80                                      | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. RICHARDSON        | CANADENS<br>A HYALINA<br>CHARDSONI                      | 0.0<br>0.1<br>0.4                     | 0.6<br>1.1<br>22.7                                  | 3100                       | 520               | <b>e</b> .           | <b>89</b> .                                       |
|                |   |              | Ю.             | 3 309035                   | 497405                     | O.<br>60                                   | CHARA SPP.<br>ELODEA CANADENS<br>POT. BROAD                  | ADENS   | 4.2<br>11.2<br>7.8                    | 2.6<br>8.1<br>7.4                                   | 3100                       | 520               | <b>8</b> .           | <b>89</b> .0                                      |

| 4       | 4 309036 | 497397 | u           |  |   |                                    |                              |   |      | <b>化热性性性性性</b>    | # 4 ( H )         |
|---------|----------|--------|-------------|--|---|------------------------------------|------------------------------|---|------|-------------------|-------------------|
|         |          |        |             | <b>70</b> 0  | GRAMINEUS<br>RICHARDSONI<br>NARROW                        | 5.6<br>10.8<br>27.4                | ယ က ဆီ<br>ဆ ဆ က်             | 1500  | 780  | -                 | O<br>4.           |
| lo a    | 309036   | 497397 | 0.9         | POT.   | NARROW  | 47.9                               | 31.8                         | 1500  | 780  | 0.7               | 0.4               |
| 9       | 960606 9 | 497397 | 0.0         | P01.   | GRAMINEUS<br>Narrow                                       | 3.5<br>60.6                        | 2.0<br>39.4                  | 1500  | 780  | # 6. <del>-</del> | 0.4               |
| 7       | 309040   | 497402 | 2.5         | CHARA<br>POT.  | SPP.  | 0.0<br>+.4                         | 0.6<br>2.8                   | 1800  |      | 2.2               | 0                 |
|         | 309040   | 497402 | 5.<br>10.   | CHARA<br>POT.<br>POT.                                    | SPP.<br>Gramineus<br>Narrow                               | 7.3<br>5.6<br>1.1                  | 0.4<br>0.8<br>8.0            | 1800  | 006  | 2.2               | 0                 |
|         | 309040   | 497402 | 2.5         | CHARA<br>POT   | CHARA SPP.<br>Pot. Gramineus                              | 43.1<br>7.3                        | 20.3<br>3.1                  | 1800  | 006  | 2.2               | 0                 |
|         | 309045   | 497408 | ۰<br>0      |  | SPP.<br>A CANADENS<br>). SPICATUM<br>BROAD                | 2.0<br>1.6<br>172.8<br>1.3         | 12 + .0<br>4.1.4<br>0.9      | 3900  | 2300 |                   |                   |
|         | 309045   | 497408 | 7.0         | CHARA SPP<br>ELODEA CA<br>MYR10. SP<br>POT. BROA         | SPP.<br>A CANADENS<br>). SPICATUM<br>BROAD                | 7.1<br>0.7<br>0.9<br>0.9           | 0.07<br>0.0.0<br>0.0.0       | 3900  | 2300 |                   | 0.                |
| e<br>e  | 3 309045 | 497408 | 7.0         | CHARA SP<br>ELODEA C<br>MYRIO. S<br>POT. BRO<br>POT. RIC | SPP.<br>A CANADENS<br>J. SPICATUM<br>BROAD<br>RICHARDSONI | 0.4.0.0<br>80.80.4.80.0            | 2.6<br>9.4.4<br>0.7.4<br>7.6 | 3900  | 2300 | 6                 |                   |
| 4       | 4 309042 | 497402 | 4.<br>10.   | CHARA<br>Pot.  | CHARA SPP.<br>Pot. Narrow                                 | 0.9<br>21.1                        | 0.4<br>16.0                  | 1500  | 1200 | 2.3               | 6.                |
| ري<br>د | 309042   | 497402 | 4<br>8      | 1 <b>4</b> 5 1   | SPP.  | 185.6<br>56.4                      | 74.5<br>38.8                 | 1500  | 1200 | 2.3               | 6                 |
| e<br>G  | 6 309042 | 497402 | 4<br>.5     | CHARA SPP<br>POT. NARR                                   | SPP.<br>Narrow  | 1.9<br>58.7                        | 1.0                          | 1500  | 1200 | 2.3               | 6.                |
| -       | 309037   | 497407 | O.          | :≴₩₽:  | SPP. A CANADENS D. EXALBESC CRISPUS ZOSTERIFORM           | 22 - 2<br>22 - 3<br>3 - 6<br>4 - 6 | O – ← & G<br>R 4 – O e       | 3500<br>000<br>000<br>000<br>000<br>000<br>000<br>000<br>000<br>000 | 2100 | ю                 | 0<br>1            |
|         | 309037   | 497407 | <b>8</b> .0 | <b>X</b> · · I   | SPP.<br>BROAD<br>CRISPUS                                  | 0.2<br>1.7<br>1.8                  | C.+<br>+.8                   | 3500  | 2100 | e. 0              | <del>-</del><br>0 |
| 6       | 3 309037 | 497407 | 0.6         | ELODEA<br>MYRIO.<br>Pot. C                               | A CANADENS OF EXALBESC CRISPUS                            | 3.88                               | 9.0<br>0.0<br>0.0            | 3500  | 2100 | 8·0               | <del>-</del><br>- |

1

(

| 4 309036 49 | 309036         | 497406 | *          |                                 | SPP.   | 77.4                                    | 51.3                                    | 900     | 780    | 0.1                                   | 0.0                       |
|-------------|----------------|--------|------------|---------------------------------|--|---|---|---------|--------|---------------------------------------|---------------------------|
| 306         | 5 309036 49    | 497406 | 2.5        | CHARA                           | SPP.   | 12.7                                    | 4.7                                     | 006     |        | 0.1                                   | 0.0                       |
| 306         | 309036 49      |        | 6          |                                 | SPP.   | 29.3                                    | 13.1                                    | 006     |        | 0.1                                   |                           |
| 306         | 309039 49      | 497402 | 9          |                                 | CHARA SPP.<br>ELGOEA CANADENS<br>MYRIG. SPICATUM<br>POT. BROAD   | 22.00                                   | 1.8<br>16.3<br>17.7                     | 2300 mm | 780 mm | # # # # # # # # # # # # # # # # # # # | # CO                      |
| ő           | 8 309039 49    | 497402 | 0.0<br>0.0 | CHARA<br>ELODE<br>POT.          | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW | 7.2<br>8.9<br>7.2                       | 8 4.<br>8. 9. 5. 0.                     | 2300 m  | 780    | # GO .                                | # <del>**</del><br>#<br># |
| ő           | 9 309039 49    | 497402 | <u>o</u>   | CHARA<br>ELODE<br>MYRIC<br>POT. | SPP. SPICATUM SPICATUM RICHARDSONI                               | 8 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 2 ± 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 2300    | 780    |                                       | n<br>n (C)<br>n           |
| 306         | 10 1 309056 49 | 497412 | O.         | : :                             | CHARA SPP.<br>ELODEA CANADENS<br>NITELLA HYALINA<br>POT. NARROW  | 36.7<br>58.1<br>1.7<br>41.5             | 18.8<br>36.0<br>1.2                     | 1500    | 500    |                                       | 0.7                       |
| o<br>e      | 2 309056 49    | 497412 | o.         |                                 | CHARA SPP.<br>ELODEA CANADENS<br>POT. NARROW                     | 109.5<br>16.2<br>24.1                   | 53.8<br>10.5<br>17.5                    | 1500    | 200    | 1.7                                   | 0.7                       |
| õ           | 3 309056 49    | 497412 | e;<br>O.   | CHARA<br>ELODE<br>POT.<br>POT.  | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW | 13.7<br>32.2<br>1.8<br>2.9              | 6.6<br>7.7<br>2.2                       | 1500    | 500    | 1.7                                   | 0.7                       |
| ő           | 11 1 309046 48 | 497414 | 6          | ;                               | SPP.   | 70.1                                    | 29.4<br>0.9                             | 1300    | 008    | o. o                                  | 0.0                       |
| စ္က         | 2 309046 49    | 497414 | 3.5        | CHARA SPP.                      | SPP.   | 154.4                                   | 61.0                                    | 1300    | 006    | 0.3                                   | 0.0                       |
| 306         | 3 309046 49    | 497414 | e e        | CHARA<br>ELODE<br>POT.          | SPP.<br>A CANADENS<br>NARROW                                     | 74.2<br>0.4<br>2.3                      | 30.3<br>0.3<br>2.1                      | 1300    | 00e    | o. 3                                  | 0.0                       |
| ĕ           | 309045 49      | 497410 | 6.2        |                                 | 104 1  | 72.4<br>21.0<br>48.7                    | 38.7<br>14.0<br>35.6                    | 4800    | 3500   |                                       | 0.1                       |
| တို့<br>ရ   | 5 309045 49    | 497410 | 6.2        | CHARA<br>ELUDEA<br>POT. N       | DENS   | RACE<br>18.1<br>48.3                    | 11.2<br>35.8                            | 0       | 3500   | o.3                                   | 0.1                       |
| ő           | 6 309045 49    | 497410 | 6.2        | CHARA<br>ELODE<br>POT.<br>POT.  | DENS   | RACE<br>84.5<br>6.1                     | 57.1<br>4.7<br>10.2                     | 4800    | 3500   | e.<br>O                               | · ·                       |
| 306         | 309054 49      | 497413 | 0.6        |                                 | ELODEA CANADENS  | 2.6                                     | 9.                                      | 2400    | 810    | 1.6                                   | 1.2                       |

|    | #<br>#<br>#<br>#<br># |          |        |         | MYRIO. EXALBESC<br>NITELLA HYALINA<br>POT. NARROW                                  | TRACE<br>142.9<br>19.2  | 81.6<br>13.1                                       |        |      |                                       |               |
|----|-----------------------|----------|--------|---------|--|---|--|--------|------|---------------------------------------|---------------|
|    | <b>6</b> 0            | 309054   | 497413 | o<br>o  | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. NARROW                                  | 5.0<br>129.0<br>14.1  | 9.6<br>70.7<br>9.9                                 | 2400   | 810  |                                       | 1.2           |
|    | <b>o</b>              | 309054   | 49741  |         | . 3  | 96.4  | 45.2   | 2400   | 8 10 | 9.                                    | . 2<br>2      |
|    | 0                     | 309054   | 497414 | i -     | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. NARROW                                  | 10.2<br>45.5<br>27.6  | 6.9<br>26.9<br>19.6                                | 2500   |      |                                       | e             |
|    |                       |          | 497414 |         | HARA S<br>LODEA<br>ITELLA<br>OT. NA  | 8.2<br>17.8<br>105.6<br>36.6  | 3.4<br>9.6<br>52.2                                 | 2500 H | 008  | # # # # # # # # # # # # # # # # # # # | # C           |
|    |                       | 309054   | 407414 | O.      | DDEA<br>TELL<br>T. R   | 4.4<br>2.6<br>21.0  | 0.7<br>1.6<br>1.4                                  | 2500   | 008  | #                                     | N •           |
| 12 |                       | 1 309041 | 497413 | ) ·     |  | 446.2   | 309.9  | 3500   | 2500 | 0.1                                   | 0.0           |
|    | 7                     | 309041   | 49741  | 3.0     | CHARA SPP.   | 470.7   | 337.2  | 3500   | 2500 | 0.4                                   | 0.0           |
|    | 6                     | 3 309041 | 497    | 3.0     | CHARA SPP.   | 389.6   | 294.2  | 3500   | 2500 | 0.1                                   | 0.0           |
|    | 4                     | 4 309044 | 497411 |         | #  | 65.7  | 45.2<br>13.8                                       | 2500   | 1400 | 9.0                                   | 0.0           |
|    | IO.                   | 309044   | 497411 |         | ELUDEA CANADENS<br>MYRIO. SPICATUM<br>NITELLA HYALINA<br>POT. BROAD<br>POT. NARROW | <br>  | 23<br>2. + . 0<br>2. + . 0<br>2. 0<br>3. 0<br>9. 0 | 2500   | 1400 | <b>9</b> .<br>O                       | o.<br>o       |
|    | 9                     | 6 309044 | 497411 | 0.7     | CHARA SPP.<br>ELDDEA CANADENS<br>MYRIO. SPICATUM<br>POT. NARROW                    | 6.0<br>6.0<br>7.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8.0<br>8 | 0 0 0 0<br>- 4 4 0                                 | 2500   | 1400 | 9.0                                   | 0.0           |
| 6  |                       | 309057   | 497413 | -<br>0. | CHARA SPP.<br>ELODEA CANADENS<br>NITELLA HYALINA<br>POT. GRAMINEUS                 | 3.8<br>112.5<br>3.0   | 7.8<br>7.8<br>7.8.1                                | 3000   | 520  | e.<br>-                               | 9             |
|    | 7                     | 2 309057 | 497413 | 0.<br>- | CHARA SPP.<br>ELODEA CANADENS<br>MYRIO. SPICATUM<br>NITELLA HYALINA<br>POT. BROAD  |   | 0.00<br>4 0.00<br>6 - 0.00                         | 3000   | 520  | . <del></del><br>6.                   | <b>ن</b><br>0 |
|    |                       | 3 309057 | 497413 | 0.      | CHARA SPP. ELODEA CANADENS POT. RICHARDSONI  | 134.5<br>13.9<br>10.6   | 62.8<br>3.7<br>0.5                                 | 3000   | 520  | 6 C -                                 | 9.0           |
|    |                       |          |        |         |  |   |  |        |      |                                       |               |

|    |             |                    |  |             | P01.             | POT. NARROW   | 9.0   | 0.4        |                 |  |             |   |
|----|-------------|--------------------|--|-------------|------------------|---|---|------------|-----------------|--|-------------|---|
| 14 |             |                    | 76<br>17<br>18<br>18<br>18<br>18<br>18<br>18 | #<br>#<br># | #<br>#<br>#<br># | PERSONAL PROPERTY OF THE PROPERTY OF THE PERSONAL PRESENT | PRESENT   |            | # H             | 计电极分配 计电子电子 医乳球球球球球球球球球球球球球球球球球球球球球球球球球球球球球球球球球球球球 |             |   |
|    | 7           | •                  | 1  | ,           |                  | NO PLANTS   | PRESENT   |            | 1               | ,  | •           | •   |
|    | က           | 1                  |  | 1           |                  | NO PLANTS   | PRESENT   |            | 1               | ,  | •           | ,   |
| 5  |             | 15 1 309076        |  | 7.0         | P01              | POT. GRAMINEUS  | 497428 7.0 POT. GRAMINEUS 27.6 15.7 3000 1200 2.2 1.6 | 15.7       | 15.7 3000       | 1200   | 2.2         | 1.6   |
|    |             | 309076<br>2 309076 |  | 7.0         | CHAR!            | 497428 7.0 CHARA SP9.<br>POT. GRAMINEUS                   | 2.1 0.7 3000 1200<br>17.0 11.5                        | 11.5       | 3000            | 1200   | 2.2 1.6     | # 4 # |
|    | 6           | 3 309076           |  | 7.0         | CHAR/<br>POT.    | CHARA SPP.<br>Pot. Gramineus                              | 6.0<br>0.0  | 0.7<br>0.0 | 0.1 3000<br>2.0 | 1200   |             | 9.  |
|    | 4           | 4 309073           |  | 3.0         | CHAR             | 497430 3.0 CHARA SPP.                                     | 7.66  | 18.4       | 18.4 3500       | 18.4 3500 3100 1.3 0.9                             | 1.3         | 6.0   |
|    | SC.         | 5 309073           | 497430 3.0 CHARA SPP.<br>POT. NARROW         | ٥<br>٥.     | CHAR/<br>POT.    | SPP.  | 17.2<br>0.4   | 7.3<br>0.3 | 7.3 3500<br>0.3 | 3100   | <b>-</b> .3 | 6.<br>O   |
|    | #<br>#<br># | 6 309073           | 497430 3.0 CHARA SPP.<br>POT. NARROW         | 3.0         | CHAR/            | CHARA SPP.<br>Pot. Narrow                                 | 162.8   | 132.6      | 3500            | 132.6 3500 3100 1.3 0.9<br>0.1                     |             | 6.0   |
|    |             |                    |  |             |                  |   |   |            |                 |  |             |   |

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NDTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER          |            | BLOCK | REPLIC<br>NO. | LOF<br>COORD J<br>UPPER | RAN<br>INATES<br>LOWER | DEPTH<br>(FT.)     | MACR                                     | MACROPHYTE<br>TAXON                              | DRY WEIGHT (G/M2) | ASH-FREE L<br>Weight<br>(G/M2) | LIGHT (FOOT      | CANDLES) | CURRENT (FT | ./SEC.)         |
|----------------|------------|-------|---------------|-------------------------|------------------------|--------------------|--|--|-------------------|--------------------------------|------------------|----------|-------------|-----------------|
| ST. CLAIR FAWN | CLAIR FAWN |       | P<br>         | 309569                  | 498255                 | 0.1.0              |  | SPP,<br>GRAMINEUS<br>NARROW                      | 2.2               | 0.6                            | 4500             | 1500     |             | 2.5             |
|                |            |       | 2             | ו פו                    | 498255                 | <del>.</del><br>0. |  | GRAMINEUS<br>Narrow                              | 26.2<br>0.2       | 15.2<br>0.1                    | 4500             | 1500     | 2.6         | 2.5             |
|                |            |       | 6             |                         | 498255                 | -<br>0.<br>-       | NITELL<br>POT. G<br>POT. N               | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. NARROW | 4                 | 2.4                            | 4500             | 1500     | 9.0         | 2.5             |
|                |            | 7     | -             | 309571                  | 498260                 | <b>o</b>           | <b>! !</b>                               | A SPP.<br>Gramineus<br>Narrow                    | O 0 10<br>6 4 0   | 0 0 4<br>4 60 0                | 3500             | 1200     | 6.<br>6.    | <b>©</b>        |
|                |            |       | 7             | 2 309571                | 498260                 | O.                 | POT .                                    | GRAMINEUS<br>RICHARDSONI                         | 23.4<br>1.9       | 19.2<br>1.0                    | 3500             | 1200     | 2.8         | # 60 ·          |
|                |            |       | ю             | 309571                  | 498260                 | <b>o</b> .         | •  | GRAMINEUS<br>RICHARDSONI<br>NARROW               | 0 + ñ<br>e.e.     | 0.7<br>10.6                    | 3500             | 1200     |             | a               |
|                |            | 6     | j             | 309584                  | 498262                 | 4<br>0             | CHARA                                    | SPP.   | 29.3              | - · · · ·                      | 2100             | 1200     | 2.0         | 1.6             |
|                |            |       | 7             | 2 309584                | 498262                 | <b>4</b><br>0      | CHARA SPP.                               | SPP.   | 23.0              | 11.0                           | 2100             | 1200     | 2.0         | <b>1.6</b>      |
|                |            |       | 6             | 3 309584                | 498262                 | <b>4</b><br>0.     | CHARA SPP.                               | SPP.   | 2.8               | 60                             | 2100             | 1200     | 2.0         | 1.6             |
|                |            |       | 4             | 309589                  | 498263                 | 7.0                |  | GRAMINEUS<br>Narrow                              | 6.0<br>9.         | e.e.                           | 1800             | 760      | 2.7         | o.<br>-         |
|                |            |       | ស             | 5 309589                | 498263                 | 7.0                | H  | GRAMINEUS<br>Narrow                              | 4.8<br>4.8        | 2. <del>4</del>                | 1800             | 760      | 2.7         | o.              |
|                |            |       | 9             | 309589                  | 498263                 | 7.0                | POT. G                                   | GRAMINEUS  | ÷.5               | 1.2                            | 1800             | 760      | 2.7         | 1.9             |
|                |            | 4     | -             | 309574                  | 498262                 | 5.0                | CHARA                                    | SPP.   | 2.7               | 1.2                            | 4000             | 1500     | 2.4         | 9.0             |
|                | •          |       |               | 309574                  | 498262                 | 8.<br>O            | CHARA SPP.                               | SPP.   | 5.8               | 3.6                            | <del>4</del> 000 | 1500     | 2.4         | 0.6             |
|                |            |       | 6             | 309574                  | 498262                 | ري<br>0.0          | CHARA<br>POT. N                          | SPP.   | 4.0<br>e.0        | 2.7<br>0.1                     | 4000             | 1500     | 2.4         | 0 · <b>6</b>    |
|                |            | ស     | -             | 1 309602                | 498270                 | o.<br>•            | CHARA SPP.<br>POT. GRAMIN<br>POT. NARROV | SPP.<br>GRAMINEUS<br>NARROW                      | 0 <del>-</del> -  | 0 0 0<br>6.7 8.                | 3200             | 1800     | 2.2         | 6.4             |
|                |            |       |               | 309602                  | 498270                 | 0.<br>0            | CHARA<br>POT. G                          | SPP.<br>GRAMINEUS                                | 9. <del>-</del>   | ÷.0                            | 3200             | (800     | 2.2         |                 |
|                |            |       | 0             | 309602                  | 498270                 | 0. <b>9</b>        | CHARA<br>POT. N                          | SPP.   | 0.1<br>6.6        | 9.0<br>8.8                     | 3200             | 1800     | 2.2         | t. <del>1</del> |

| # C         | 11. 11. 11. 11. 11. 11. 11. 11. 11. 11. | 400000                                  |          | TOVIC                 |                                    | 2 6                      |                      |                       |           |                |                   |
|-------------|---|---|----------|-----------------------|------------------------------------|--------------------------|----------------------|-----------------------|-----------|----------------|-------------------|
|             | 0F 0000000 -                            | 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | ) H      | ******                |                                    | A . O                    |                      |                       | 0061      | ), G           | 5.1               |
| ·           | 2 309590 49                             | _ = :                                   | 3.0      | CHAR                  | SPP.                               | 10.0                     | 8.4                  | 3200                  | 1900      | <b>60</b>      | 1.3               |
|             | 3 309590                                | 498270                                  | 3.0      | CHARA                 |                                    | 8                        | 4.4                  | 3200                  | 1900      |                | e                 |
| 7           | 7 1 309584 49                           | 498268                                  | 3.0      | CHARA                 | A Spp.                             | 9.71                     | 0.0                  | 3700                  | 2900      | 0.7            | 0.5               |
|             | 2 309584 49                             | 498268                                  | 9.0      | CHARA                 | יטו                                | 31.5                     | 18.6                 | 3700                  | 2900      | 0              | 0.5               |
|             | 3 309584 48                             | 498268                                  | 9.0      | CHARA<br>POT.         | A SPP.<br>Gramineus                | 12.7<br>3.2              | R                    | 3700                  | 2900      | 0              | 0.5               |
|             | 8 1 309606 49                           | 498275                                  | 4        | 2                     | SPP.                               | 12.2                     | 6.8                  | 3400                  | 1900      | 6.0            | 0.7               |
|             | 2 309606 49                             |   | 4<br>0   | CHARA                 | SPP.                               | 21.3                     | 6.2                  | 3400                  | 1900      | 0.9            | 0.7               |
|             | 3 309606 49                             | 498275                                  | <b>○</b> | ! -                   | ) Z                                | 4.0                      | 0 .0                 | 3400                  | 1900      | 6. O           | 0.7               |
| 9           | 1 309601 49                             | 498277                                  | 9.0      | P0T.                  | RICHARDSONI                        | 5.2                      | 3.1                  | 3600                  | 2100      | 1.7            |                   |
|             | 2 309601 48                             | . = :                                   | 9.0      |                       | RICHARDSONI<br>Narrow              | 9.6<br>3.7               | 7.5<br>2.2           | 3600                  | 2100      | 1.7            | ب<br>ت            |
|             | 3 309601 49                             | 498277                                  | 0.0      | POT.                  | RICHARDSONI                        | 26.6                     | 18.3                 | 3600                  | 2 100     | 1.7            | 7.5               |
|             | 4 309593 48                             | 498273                                  | 2.5      | CHARA<br>POT.<br>POT. | A SPP.<br>Gramineus<br>Narrow      | O 2, 80<br>10, 10, 80    | 6.1<br>6.1<br>6.1    | 1500                  | 1300<br>0 | <b>9</b> .     | <b>1</b> . •      |
|             | 5 309593 49                             | 498273                                  | 2.5      | P01.                  | CRISPUS<br>Narrow                  | 2.9<br>1,8               | 2.2<br>3             | -<br>-<br>-<br>-<br>- | 1300      | 9.             | ÷.                |
|             | 6 309593 48                             | 498273                                  | 2.5      | 901<br>901            | GRAMINEUS<br>RICHARDSONI<br>NARROW | 4 W Q<br>ñ ŵ rù          | ₩ ₩ O                | 1500                  | 1300      |                | <del>-</del><br>- |
| ō           | 1 309619 49                             | 498284                                  | 2.0      | CHARA<br>POT.         | A SPP.<br>CRISPUS                  | 0.0<br>e.s               | 7.3                  | 3800                  | 3000      | 1.2            | 0.7               |
|             | 2 309619 49                             | 498284                                  | 2.0      | CHARA<br>POT.         | GRAMINEUS                          | 4.0<br>e.4               | 3.7<br>4.6           | 3800                  | 3000      | 1.2            | 0.7               |
|             | Ö                                       | 498284                                  | 2.0      | CHARA<br>Pot.         | SPP.<br>GRAMINEUS                  | 6. A. E.                 | C. 4.                | 3800                  | 3000      | <del>.</del> 2 | 0.7               |
|             | 4 309619 49                             | 498285                                  | <b>.</b> | CHARA<br>POT.<br>POT. | A SPP.<br>GRAMINEUS<br>RICHARDSONI | 6.0<br>8.0<br>8.0<br>8.0 | 81.4<br>11.8<br>7.6  | 3400                  | 2500      | -              | 6.<br>O           |
|             | 309619 49                               | 498285                                  | <b>√</b> | CHARA<br>POT.<br>POT. |                                    | 21.9<br>3.7<br>25.9      | 1. 1<br>3. 1<br>69.6 | 3400                  | 2500      | <u>-</u>       | <b>6</b> .<br>O   |
| 6 309619 49 | 6 309619 49                             | 498285                                  | <b>4</b> | CHARA<br>POT.         | A SPP.<br>RICHARDSONI<br>NARROW    | 2693.3<br>7.3<br>2.8     | 1706.8<br>5.5<br>2.2 | 3400                  | 2500      | <del>-</del> - | 6.<br>O           |

| -    | 309615 | 498283                                     | 3.0        | CHARA<br>POT.<br>POT. | 309615 498283 3.0 CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW | 5.9               | 0.0<br>0.7<br>4.0 | 3600                   | 1800 | 0.7 | 6.0  |
|------|--------|--|------------|-----------------------|---|-------------------|-------------------|------------------------|------|-----|--|
| 7    | 309615 | 498283                                     | 3.0        | P01.                  | 2 309615 498283 3.0 POT GRAMINEUS 9.4 5.9 3600 1800 0.7 0.5   | 4.0               | 0.0               | 5.9 3600               | 1800 | 0.7 | 0.5  |
| 6    | 309615 | 498283                                     | 9.0<br>9.0 | CHAR!<br>POT.         | 309615 498283 3.0 CHARA SPP. POT. GRAMINEUS VALLISNERIA AMER  | 7.0<br>0.0<br>8.0 | 0.0<br>0.3        | 0.3 3600<br>0.7<br>0.3 | 1800 | 0.7 | S. 9   |
| 4    | 309616 | 309616 498279 4.0 CHARA SPP.               | 0.         | CHAR                  | 4 309616 498279 4.0 CHARA SPP. 17.8                           | 17.8              | 10.6              | 10.6 4500              | 3100 | 1.0 | 0.8  |
| i 10 | 309616 | 309616 498279 4.0 CHARA SPP.               | 0.4        | CHAR                  | 5 309616 498279 4.0 CHARA SPP. 38.2 (6.3 4500 3100 1.0 0.8    | 38.2              | 16.3              | 16.3 4500              | 3100 | 1.0 | 0.8<br>m m m m m m m m m m m m m m m m m m m |
| 9    | 309616 | 309616 498279 4.0 CHARA SPP.<br>POT. NARRO | 0.         | CHAR/<br>POT.         | CHARA SPP.<br>Pot. Narrow                                     | 96.9              | 47.0              | 47.0 4500              | 3100 | 0.1 | <b>8</b> .0                                  |

Ξ

L-67

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND      | ISLAND  | BLOCK<br>NO.   | LOCK REPLICATE<br>NO. NO. |            | LORAN<br>COORDINATES<br>PPER LOWER | DEPTH<br>(FT.)     | MACROPHYTE<br>TAXON  | DRY WEIGHT (G/M2)           | ASH-FREE LI<br>WEIGHT (G/M2) | LIGHT (FOOT | CANDLES)  | CURRENT (FT        | ./SEC.)                                  |
|-------------------|---------|----------------|---------------------------|------------|------------------------------------|--------------------|--|-----------------------------|------------------------------|-------------|-----------|--------------------|--|
| ST. CLAIR RUSSELL | RUSSELL | 1              |                           | 309953     | . 42                               |                    |  | 3.8<br>33.7                 | 1.2                          | 4000        | 450       | 2.5                | <b>8</b> 0.                              |
|                   |         |                |                           |            | 49865                              | 0.0<br>0           | CHARA SPP.<br>Pot. Narrow  | TRACE<br>6.0                | 4                            | 4000        | 450       | 2.5                | <b>8</b> .0                              |
|                   |         |                |                           | 309953     | 498657                             | 10.0               | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW                      | 0.15<br>2.55<br>7.          | - o. e.                      | 4000        | 4 50<br>0 | 2.5                | <b>8</b> .0                              |
|                   |         | 6              | # 1<br># 1                | 309944     | 498653                             | ທ<br>ໝ             | ALIN   | 22.2<br>23.6<br>8.6.8       | 28.0<br>1.9<br>2.6           | 3500        | 1700      | 2.3                | 2.1                                      |
|                   |         |                | 2                         | 309944     | 4                                  |                    | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW                      | 80.8<br>2.9                 | 9.0<br>0.2<br>0.0            | 3500        | 1700      | 2.3                | 2.1                                      |
|                   |         |                |                           | <b>I</b>   | 4                                  | بن<br>دن           | CHARA SPP.<br>Pot. Narrow  | 67.9<br>1.5                 | 32.1<br>1.3                  | 3500        | 1700      |                    | ı i                                      |
|                   |         |                | 4                         | . (        | 4                                  | 80<br>IU           | ELODEA CANADENS<br>POT. GRAMINEUS                                | 0.4<br>14.1                 | 0.0<br>6.2                   | 3000        | 1600      |                    | o. <del>-</del>                          |
|                   |         |                | 1                         | H          | 498655                             | ون<br>ري           | CHARA SPP.<br>POT. GRAMINEUS                                     | 19.6<br>6.0                 | Ø 60                         | 3000        | 1600      | 2.4                | e. <del>L</del>                          |
|                   |         | ,              | 9                         | <b>H</b> ( | 4 4                                | εο<br>.Ο           | CHARA SPP.<br>Pot. Gramineus                                     | 0.8<br>16.2                 | .0.4<br>8.7                  | 3000        | 1600      | 2.4                | . 60                                     |
|                   |         | ၉              |                           |            | 498                                | -<br>-<br>-        | CHARA SPP.<br>ELGDEA CANADENS                                    | 14.8<br>8                   | 0.7<br>0.01                  | 3800        | 1300      | 2.5                | + H                                      |
|                   |         |                |                           | •          | 4986                               | <del>.</del><br>0. | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW | ο 10 ± ± ±<br>ο υ εσ 4 :    | ພ <u>−</u> − o<br>ພະເວ       | 3800        | 1300      | 2.5                |  |
|                   |         |                | е                         | 309970     | 498663                             | -<br>0.            |  | 7.0<br>28.0<br>TRACE<br>1.5 | 3.4<br>20.5<br>2.5<br>7.0    | 3800        | 1300      | 2.5                | <del>-</del> .                           |
|                   |         | . 4<br>. 4<br> |                           | 309968     | 498662                             | 7.0                | POT. RICHARDSONI   | 19.1                        | 13.1                         | 3800        | 1900      | 9. 1               | 0.5                                      |
|                   |         |                | 2                         | 2 309968   | 1 <del>4</del>                     | y .                | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI                | 1.0<br>1.0<br>33.3          | 0.5<br>0.6<br>20.0           | 3800        | 1900      | 60 H<br>- R<br>- R | 0 II |
|                   |         |                | 6                         | 3 309968   | 3 498662                           | 7.0                | CHARA SPP. POT, RICHARDSONI                                      | 2.7                         | 1.2                          | 3800        | 1900      | <b>.</b><br>∞.     | O  |

| -   | -          | ı      | <b>6</b> 0     | CHARA SPP.<br>ELUDEA CANADENS<br>NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW | 4.21<br>4.04<br>7.21<br>8.8 | 6.3<br>2.7<br>7.6<br>6.3  | 3800 | 1700         | 8.          | e .                 |
|-----|------------|--------|----------------|---|-----------------------------|---------------------------|------|--------------|-------------|---------------------|
| 7   |            |        | o.<br>8        | CHARA SPP.<br>POT. RICHARDSONI<br>POT. NARROW                                       | 4 സ ഗ<br>ഗ സ ജ              | 9 9 9<br>9 8 9            | 3800 | 1700         |             | 6.                  |
| 0   |            |        | 8<br>0.0       | POT. RICHARDSONI  | 10 T                        | 3.6                       | 3800 | 1700         | 8.          |                     |
|     | 1          | '      | 0.0            | CHARA SPP.<br>Pot. Gramineus  | 93.2<br>0.3                 | 42.3<br>0.2               | 3800 | 1900         | æ.          | <del>۔</del><br>بون |
|     | : ;        | ,      | o. ø           | CHARA SPP.<br>ELODEA CANADENS   | 50.7<br>0.3                 | 23.9<br>0.1               | 3800 | 1900         | 60          | ٠.<br>ت             |
| : : | '          | '      | o. <b>9</b>    | CHARA SPP.<br>Pot. Gramineus  | 19.6<br>0.5                 | 0.0<br>4.€                | 3800 | 1900         | æ.          | <br>10.             |
| -   | 309974     | 498666 | B              | CHARA SPP.<br>Pot. Narrow   | 102.9<br>4.1                | 47.1                      | 3800 | 3500         | ÷.6         | e.                  |
|     | 309974     | 498666 | 3.5            | CHARA SPP.<br>Pot. Narrow   | 156.2<br>0.2                | 52.6<br>0.2               | 3800 | 3500         | 1.6         | t.5                 |
|     | 309974     | 498666 | Э.<br>Б        | CHARA SPP.<br>Pot. Narrow   | 16.2<br>9.4                 | 7.9                       | 3800 | 3500         | -<br>. 6    | ے.<br>تا            |
|     | 309977     | 498664 | 0.0<br>0.0     | POT. RICHARDSONI  | 44.3                        | 36.1                      | 3800 | 1300         | 2.3         | 1.7                 |
|     | 309977     | 498664 | 10.0           | NITELLA HYALINA<br>Pot. Richardsoni   | 0.1<br>32.1                 | 0.0<br>21.2               | 3800 | 1300         | 2.3         | 1.7                 |
|     | 309977     | 498664 | 10.0           |   | 22.5                        | 18.6                      | 3800 | 1300         | 2.3         | 1.7                 |
|     | 309963     | 498664 | ه.<br>ت        | CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow   | 8.2<br>15.4                 | 1.2<br>1.3<br>1.3         | 4500 | 2800<br>2800 | б.<br>-     | <b>4</b> .          |
| 7   | 309963     | 498664 | ຄ<br>ພ         | CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow   | 8.8<br>25.2                 | 20.5<br>20.2              | 4500 | 2800         | e. <u>-</u> | 4                   |
| е   | 309963     | 498664 | 8.             | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW   | 2.7<br>5.0<br>26.2          | 4.6<br>4.6<br>7.6         | 4500 | 2800         | 6           | 4.4                 |
| ₹   | <b>K</b> 1 | 498665 | <b>4</b><br>0. |   | 004 ၏<br>ပေပေအ              | 0.1<br>0.1<br>2.6<br>13.4 | 3000 | 1700         | 2.1         | 9.0                 |
| ស   | 309968     | 498665 | 4<br>0         | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW   | 18.8<br>0.9<br>72.2         | 7.3<br>0.7<br>52.7        | 3000 | 1700         |             | 6. O H              |
|     | 9060E 9068 | 498665 | <b>o</b> .     | CHARA SPP.  | 0.3                         | 0.1                       | 3000 | 1700         | 2.1         | 9.0                 |

|   | 1   |   | 1 6 1 4   |
|---|---|---|---|
|   | 1200  | 1200  | 1200  |
| 0.6<br>16.6   | 75.6 2000 1200  | 56.7 2000<br>0.4  | 81.4 2000   |
| 1.0<br>22.5   | 196.1   | 141.1   | 105.6   |
| POT. RICHAROSONI ************************************ | 1 309957 498662 5.5 CHARA SPP. 196.1 75.6 2000 1200 1.6 1.4 | 309957 498662 5.5 CHARA SPP. 141.1 56.7 2000 1200 1.6 1.4 0.5 0.4 | 3 309957 498662 5.5 CHARA SPP. 105.6 81.4 2000 1200 1.6. 1.4<br>O.3. O.3. O.3. O.3. O.3. O.3. O.3. O.3. |
|   | - ii  | 7   | e e   |

L-70

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA 2. TRACE = LESS THAN 0.001 G/M2

| RIVER   | ISLAND                  | BLOCK<br>NO.                          | REPLICATE<br>NO. | re LOR<br>COORDI | 3 2    | DEPTH<br>(FT.)  | MACROPHYTE<br>TAXON  | DRY WEIGHT                                 | ш  | LIGHT (FDDT | CANDLES)  | CURRENT (FT                            | ./SEC.)                                 |
|---------|-------------------------|---------------------------------------|------------------|------------------|--------|-----------------|--|--|--|-------------|---|--|---|
|         | <b>有热型的复数形式 医甲状腺素 医</b> | # # # # # # # # # # # # # # # # # # # |                  | UPPER            | LOWER  |                 |  | (G/M2)                                     | (G/M2)   | SURFACE     | BOTTOM  | SURFACE                                | BOTTOM                                  |
| DETROIT | BELLE                   | -                                     | -                | 312761           | 4999   | O.              | POT. NARROW<br>VALLISNERIA AMER                                    |  | 1.3<br>1.0   | 3000        | 370   | 9·0                                    | 4.0                                     |
|         |                         |                                       | 2                | 2 312761         | 499953 | O.              | 34   | ## 10                                      | 0.2  | 3000        | 370   | 0.0                                    | 4.0                                     |
|         |                         |                                       | (7)              | 312761           |        | o.<br>6         |  | ER 7.5                                     | . U  | 3000        | 370   | 0.0                                    | 4.0                                     |
|         |                         | 8                                     | -                | 312766           | 4999   | <b>6</b> 0      | 8 4  |  | 0.5<br>0.5   | 3500        | 450   | 0.3                                    | 0.1                                     |
|         |                         |                                       | 7                | 2 312766         | 499958 | o.<br>6         | VALLISNERIA AMER   |  | 6.0  | 3500        | 450   | 0.3                                    | 0.1                                     |
|         |                         |                                       |                  | 312766           | 4      | <b>89</b><br>O. | POT. NARROW<br>VALLISNERIA AMER                                    |  | 0.4<br>0.6   | 3500        | 450   | 0.3                                    | o. 4                                    |
|         |                         | <b>е</b>                              | :                | 312779           | 499966 | <b>4</b><br>0   |  | 9.9<br>9.9<br>3.7<br>1.0                   | 7.3<br>7.3<br>0.6                                  | 3000        | 150<br>150                                      |  | . O                                     |
|         |                         |                                       |                  | 2 312779         | 499966 | <b>4</b><br>0.  | • •  | NI 2.6                                     | # - 60   | 3000        | 150   | . O                                    | e .<br>0                                |
|         |                         |                                       | ო                | 312779           | 499966 | 4<br>0.         |  | A1 2 2 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 | 2. 1. 2. 3. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. | 3000        | # 150<br>150<br>180<br>180<br>180<br>180<br>180 | <b>6</b> 0.                            | . O                                     |
|         |                         | 4                                     | !                | 1 312786         | 499972 | ю<br>О.         | CHARA SPP. POT. NARROW VALLISNERIA AMER                            | 3.2<br>0.1                                 | 6 - C  | 3600        | 820   | 80.0                                   | 0.5                                     |
|         |                         |                                       | 2                | 312786           | 499972 | ю<br>О          | POT. NARROW<br>VALLISNERIA AMER                                    |  | 0.1  | 3600        | 820   | 9.0                                    | 0.5                                     |
|         |                         |                                       | 6                | 312786           | 499972 | ro<br>O         | NITELLA HYALINA<br>POT. CRISPUS<br>POT. NARROW<br>VALLISNERIA AMER | -  | 4000<br>6.00                                       | 3600        | 820   | 60<br>60<br>60                         |   |
|         |                         | 10                                    | -                | 1 312802         | 499982 | o.<br>ø         | NITELLA HYALINA<br>POT. RICHARDSONI<br>VALLISNERIA AMER            | 17.5<br>17.5<br>VI 2.6                     | 2.0<br>0.3<br>0.3                                  | 3200        | 400   |  |   |
|         |                         |                                       | 7                | 312802           | 499982 | <b>6</b> .0     | CHARA SPP.<br>POT. NARROW<br>VALLISNERIA AMER                      | 12.1<br>1.1<br>1.0                         | 3.5<br>0.7<br>0.7                                  | 3200        | 400   |  | . O                                     |
|         |                         |                                       |                  | 312802           | 499982 | 0.<br>9         | NITELLA HYALINA<br>POT. RICHARDSONI                                | A 32.8                                     | (3.9<br>(3.9                                       | 3200        | 400   | ## ## ## ## ## ## ## ## ## ## ## ## ## | M C C M M M M M M M M M M M M M M M M M |

| 6 1 312810 499988 11.0 CHARA SPP. 2 312810 499988 11.0 CHARA SPP. POT. MARROW VALLISNERIA AMER POT. NARROW POT. NARROW VALLISNERIA AMER 2 312858 49996 4.5 CHARA SPP. 2 312858 49996 6.5 CHARA SPP. 4 312858 49996 6.5 CHARA SPP. 5 312858 49996 6.5 CHARA SPP. 6 312858 49996 6.5 CHARA SPP. 7 1 312858 49996 6.5 CHARA SPP. 8 1 312858 49996 6.5 CHARA SPP. 9 07. NARROW VALLISNERIA AMER 5 312858 49996 6.5 MYRIO. SPICATUM NITELLA HYALINA POT. NARROW VALLISNERIA AMER 6 312858 49996 6.5 MYRIO. SPICATUM NITELLA HYALINA POT. NARROW NITELLA HYALINA NIT |  | 6.4                            | 2.8                          |                  |   |  |                   |
|--|--|--------------------------------|------------------------------|------------------|---|--|-------------------|
| 2 312810 499988 11.0 CHARA 3 312810 499988 11.0 CHARA 2 312858 499996 4.5 CHARA 2 312858 499996 6.5 CHARA 3 312858 499996 6.5 CHARA 4 312858 499996 6.5 MYRIQ 5 312858 499996 6.5 MYRIQ 7 VALLI 8 312846 499996 5.0 MYRIQ 8 312846 499996 5.0 MYRIQ 8 312846 499996 5.0 MYRIQ 9 312846 499996 5.0 MYRIQ 8 312846 499996 5.0 MYRIQ 9 01.  | 0.1.0  | 12.6<br>2.9                    | 2.8                          | 3000             | 510   | o. –   |                   |
| 3 312810 499988 11.0 CHARA 2 312858 499996 4.5 CHARA 2 312858 499996 6.5 ELODE 4 312858 499996 6.5 ELODE 5 312858 499996 6.5 NITEL POT. VALLI 907. VALLI 312846 499996 5.0 ELODE NITEL NITEL NITEL NITEL NITEL NITEL NITEL POT. 3 312846 499996 5.0 NITEL POT. 5 312846 499996 5.0 NITEL POT. 5 312846 499996 5.0 NITEL POT. 7 312846 499997 5.0 NITEL POT.  | 1.0  | 38.7<br>0.2<br>TRACE           | 8.2<br>0.2<br>1.1            | 3000             | # 0 10 mm   |  | . O               |
| 1 312858 499996 4.5<br>3 312858 499996 4.5<br>4 312858 499996 6.5<br>6 312846 499996 6.5<br>3 312846 499996 6.5<br>4 312846 499996 5.0<br>5 312846 499996 5.0  | 0.<br>-  | 0.6<br>13.8<br>1.0<br>2.2      | 0.2<br>0.3<br>0.5            | 3000             | 10 TC | 64<br>81<br>81<br>81<br>65<br>81<br>65<br>11<br>18 | H 60              |
| 3 312858 49996 4.5<br>4 312858 49996 6.5<br>5 312858 49996 6.5<br>6 312858 49996 6.5<br>6 312846 49996 5.0<br>3 312846 49996 5.0   | 4.5  | 12.6                           | 5.2                          | 4300             | 2500  | 0.2  | 0.0               |
| 3 312858 49996 4.5<br>4 312858 499996 6.5<br>5 312858 499996 6.5<br>1 312846 499996 6.5<br>3 312846 499996 5.0<br>4 312846 499996 5.0  | 4.<br>№  | 66.9<br>TRACE                  | 21.5                         | 4300             | 2500  | 0.5  | 0.0               |
| 5 312858 499996 6.5<br>6 312858 499996 6.5<br>2 312846 499996 5.0<br>3 312846 499996 5.0<br>4 312846 499997 5.0  | 4.5 CHARA<br>POT.  | 26.3<br>TRACE                  | 10.7                         | 4300             | 2500  | 0.2  | 0.0               |
| 5 312858 499996 6.5<br>6 312846 499996 5.0<br>3 312846 499996 5.0<br>4 312846 499997 5.0   | 6.5 ELODEA CANAD<br>NITELLA HYAL<br>POT. NARROW<br>VALLISNERIA | TRACE<br>7.9<br>0.8            | 2.00<br>4.4.80               | 4000             | 1600  | 0.2  | 0.4               |
| 3 312846 499996 5.0<br>3 312846 499996 5.0<br>4 312846 499997 5.0<br>5 312846 499997 5.0   | in<br>G  | 18.3<br>37.6<br>TRACE<br>TRACE | 14.2<br>16.7                 | 4000             | 1600  | 0.2  | 0.1               |
| 1 312846 49996 5.0<br>2 312846 49996 5.0<br>3 312846 499996 5.0<br>4 312846 499997 5.0   | 6<br>.5  | જ ∸ છ<br>હે. જે.<br>હે. છે. 4. | დ <b>დ</b> .<br>დ <b>დ</b> . | 4000             | 1600  | 0.2  | ÷.                |
| 19996 5.0 ELODEA<br>NITELLA<br>NITELLA<br>POT. NA<br>POT. NA<br>19997 5.0 NITELLA<br>POT. NA<br>19997 5.0 CHARA S<br>19997 5.0 CHARA S   | 9. O   | 48.0<br>16.2                   | 33.9.<br>7.6                 | <b>4</b><br>8    | 1700  | 0.3  | 0.1               |
| 19996 5.0 MYRID.  NITELLA POT. NA 19997 5.0 NITELLA POT. NA 19997 5.0 CHARA S  | ю<br>О   | TRACE<br>34.3<br>8.8<br>TRACE  | 4.0<br>4.4                   | 4 100            | 1700  | e. 0   | ÷<br>0            |
| 19997 5.0<br>19997 5.0   | 5.0  | 4                              | 16.6<br>0.0                  | 4100             | 1700  | 6.<br>O  | 0.1               |
| 312846 499997 5.0  | ည<br>()  | 25.8<br>TRACE                  | 15.0                         | 4 100            | 1700  | 0.3  | 0<br>-            |
|  | 5.0  | TRACE<br>42.9<br>TRACE         | 21.4                         | 4 100            | 1700  | e. 0   | <del>-</del><br>0 |
| 9997 5.0   |  | +                              | 6.9                          | 4 100            | 1700  | 0.3  |                   |
| 9 1 312835 499991 3.5 CHARA SPP.<br>POT. NARROW  | 3.5  | 120.5<br>TRACE                 | 45.8                         | <del>1</del> 000 | 2000  | <b>0</b> .4  | 0.0               |

|             |                 |   |            | VALLISNERIA AMER  | 0.8                           | 0.5                        |   |             |         |         |
|-------------|-----------------|---|------------|---|-------------------------------|----------------------------|---|-------------|---------|---------|
| 7           | 2 312835        | 499991                                  | 3.5        | CHARA SPP.  | 126.8                         | 44.2                       | 4000  | 2000        | 4.0     | 0.0     |
| ၈           | 312835          | 499991                                  | 10.        | NITELLA HYA<br>VALLISNERIA  | 35.0<br>0.2                   | 13.6<br>0.2                | 4000  |             | 4.0     | o.<br>o |
| 4           | 4 312835 499993 | 499993                                  | တ<br>(၀    |   | e ← 0 0<br>e v. o o           | 8.0<br>6.0<br>7.0<br>8.0   | 4 100                                       | Ä           | o<br>4. | . o<br> |
| en          | 5 312835        | # 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 0.         | MYRIO. SPICATUM<br>NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER | 38.7<br>119.1<br>0.7<br>0.6   | 26.1<br>41.9<br>0.4<br>0.3 | # 4 100   1   1   1   1   1   1   1   1   1 |             | 0.4     |         |
| φ           | 6 312835        | 499993                                  | O. 9       | MYRIO. SPICATUM<br>Nitella Hyalina                                    | 17.8<br>110.2                 | 13.7<br>27.1               | 4 100                                       | 1500        | 4.0     |         |
| 7           | 312836          | 499998                                  |            | NITELLA HYALINA<br>Pot. Narrow<br>Vallisneria amer                    | იოდ<br>0.4.~                  | 2.62<br>9.99<br>9.99       | 4200  | 700         |         | 0<br>4  |
| <b>60</b>   | 8 312836        | 499998                                  | 10.0       | NITELLA HYALINA<br>POT. CRISPUS<br>POT. NARROW<br>VALLISNERIA AMER    | ზ. O. w. ←<br>ი w. 4 rb.      | 6.0<br>0.6<br>1.2          | 4200  | 700         |         | 0<br>4. |
| တ           | 9 312836        | 499998                                  | 0.0<br>0.0 | CHARA SPP.<br>Pot. Richardsoni<br>Pot. Narrow                         | 0.0<br>0.0<br>0.0             | 3.6<br>3.6<br>2.1          | 4200  | 700<br>00 T |         | 0<br>4  |
| 10 1 312822 | 312822          | 499992                                  | 9.0<br>8   | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. NARROW                      | <u>ตัด</u> 4<br>ผ่อณั         | 9 9 9<br>9 9 9             | 3800  | 1900        | 4.0     | 0.1     |
| r           | 2 312822        | 499992                                  | 9·0        | CHARA SPP. POT. GRAMINEUS POT. NARROW VALLISNERIA AMER                | 22<br>0<br>- 4 - 6<br>- 6 - 0 | 6.4<br>0.2<br>0.3          | 3800  | 1900        | o<br>4. |         |
| င           | 3 312822        | 499992                                  | 9.0<br>0.0 | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW  | 23.0<br>4.0<br>1.0            | 04.0<br>04-r               | 3800  | 1900        | 4.      | o<br>-  |

î

(

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE \* LESS THAN 0.001 G/M2

| RIVER ISLAND | ISLAND    | BLOCK<br>NO. | ~ 1        | EPLICATE LOR.<br>NO. COORDII<br>UPPER |          | <b>ОЕРТН</b><br>(FT.) |                                      | MACROPHYTE<br>Taxon  | DRY WEIGHT (G/M2)           | ASH-FREE L<br>WEIGHT<br>(G/M2)             | LIGHT (FOOT |                      | CURRENT (F'                      | T./SEC.) |
|--------------|-----------|--------------|------------|---------------------------------------|----------|-----------------------|--------------------------------------|--|-----------------------------|--|-------------|----------------------|----------------------------------|----------|
| DETROIT      | HENNEP IN | -            | ;          | 1 314064                              | וטו      | 80<br>73              |                                      | NARROW   | 40.7                        | 28.1                                       | 4500        | 610                  | 0.5                              | 0.1      |
|              |           |              | 2          | 2 314064                              |          | 99<br>72              |                                      | NARROW   | 38.6                        | 23.3                                       | 4500        | 810                  | 0.5                              | 0.1      |
|              |           |              | 3 314064   | 314064                                |          | 80<br>37              | POT.                                 | NARROW   | 44.3                        | 29.6                                       | 4500        | 8 10                 | 0.5                              | 0.4      |
|              |           | 7            | -          | 1 314067                              | ו המי    | 7.0                   | POT.<br>VALLI                        | POT. NARROW<br>Vallisneria amer  | 34.8<br>1.8                 | 22.7<br>1.3                                | 4500        | 200                  | 4.0                              | 0.1      |
|              |           |              | N          | 314067                                | 7 500672 | 7.0                   | ELODEA<br>POT. Z<br>POT. N<br>SAGITT | ELGDEA CANADENS<br>POT. ZOSTERIFORM<br>POT. NARROW<br>SAGITTARIA SPP.  | 0 2 <del>4</del> 2          | 0.0<br>4.74<br>8.1                         | 4500        | <b>8</b>             | 4.0                              | 0        |
|              |           |              | ღ          | 3 314067                              | 7 500672 | 7.0                   | POT.<br>SAGIT                        | DOT. NARROW<br>SAGITTARIA SPP.   | 42.9                        | 28 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | 4500        | 500                  | 4.0                              | 0.1      |
|              |           |              | 4          | 314059                                | 9 500677 | ສ.<br>ຄ               | POT.<br>POT.<br>VALLI                |  | 43.7<br>TRACE<br>1.8        | 29.6                                       | 2600        |                      |                                  | 6 CO     |
|              |           |              | ស          |                                       | 500677   | හ.<br>ග               | POT.<br>POT.<br>VALLI                |  | 36.0<br>3.4.                | 26.6<br>2.4<br>6.4                         | 2600        | 330                  |                                  | 60.<br>0 |
|              |           |              | ဖ          | 314059                                | 500677   | ທ<br>ທ                | POT.<br>POT.<br>VALLI                | RICHARD<br>NARROW<br>SNERIA  | 64.1<br>TRACE<br>6.4        | 8. 4<br>8. 6                               | 2600        | 330                  | <br><br><br><br><br><br><br><br> | 60°      |
|              |           | 6            | 3 1 314075 | 314075                                | 5 500683 | 7.5                   | POT.<br>POT.<br>SAGIT<br>VALLI       | * NZ - S :   | 20.0<br>2.0.7<br>4.4<br>2.4 | 0 60 -                                     | 0066        | 100                  | 0.7                              | o.       |
|              |           |              | 2          | 314075                                | 5 500683 | 7.5                   | POT.<br>VALLI                        | POT. NARROW<br>VALLISNERIA AMER  | 22.4<br>0.3                 | 15.3<br>0.2                                | 3900        | 1100                 | 0.2                              | 0.1      |
|              |           |              |            | 314075                                | 5 500683 | 7.5                   | NITEL<br>POT.<br>POT.<br>SAGIT       | ומיברו   | - m - m<br>- m - w          | 13.7<br>7.0<br>7.0<br>8.2                  | 3900        | <del>1</del> 00      | 0.5                              | 0.1      |
|              |           | 4            | -          | 314089                                | 500694   | 0.<br>80              | NITEL<br>POT.<br>POT.<br>VALLI       | NITELLA HYALINA<br>POT. ZOSTERIFORM<br>POT. NARROW<br>VALLISNERIA AMER | 29. 1<br>3.55<br>4.7<br>7.1 | 2.00<br>0.00<br>0.00<br>8.4                | 2500        | <b>6</b>             | 0.5                              | 0.0      |
|              |           |              | 7          | 314089                                | 500694   | o.<br>6               | CHARA<br>POT.<br>VALLI               | CHARA SPP.<br>POT. NARROW<br>VALLISNERIA AMER                          | 2.8<br>26.7<br>3.7          | 1.0<br>18.4<br>2.7                         | 2500        | <b>6</b><br><b>6</b> | 0.2                              | 0.0      |
|              |           |              |            | 3 314089                              | 500694   | 0.6                   | POT.                                 | NARROW   | 45.4                        | 31.1                                       | 2500        | 400                  | 0.2                              | 0.0      |

)

|                      |                  | );<br>(4)<br>(4)<br>(4)<br>(4)<br>(4)<br>(4)<br>(4)<br>(4)<br>(4)<br>(4) | #<br>#<br>#<br>#<br># | *************************************** | SAGITTARIA SPP.  | Ø .                     | 4.9                 | 1     | 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 1               |       |
|----------------------|------------------|--|-----------------------|---|--|-------------------------|---------------------|-------|---|-----------------|-------|
|                      | - :              | 1 314075 5   | 500688                | 7.0                                     | FOT. ZOSTERIFORM<br>POT. NARROW<br>SAGITTARIA SPP.       | 1.6<br>14.5<br>2.7      | O 00 51<br>60 10 00 | 4000  | <u>.</u>                                | o.s             | 0.2   |
|                      | 2                | 314075 5   | 500688                | 7.0                                     | POT. ZOSTERIFORM<br>VALLISNERIA AMER                     | 9. S.                   | 3.6<br>2.0          | 4000  | 1100                                    | 0.5             | 0.2   |
|                      |                  | 314075 5   | 500688                | 7.0                                     | NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER       | 10.4<br>13.8<br>1.1     | 4 90<br>0.00<br>7.0 | 4000  | 1100                                    | ە.<br>تە        | 0.2   |
|                      |                  | 314066 5   | 500688                | 9.5                                     | POT. RICHARDSONI   | 22.3                    | 59.8                | 2400  | 730                                     | 1.3             | 0.3   |
|                      |                  | 314066 5   |                       | و.<br>ت                                 | POT. RICHARDSONI<br>VALLISNERIA AMER                     | 29.3<br>2.6             | 20.7                | 2400  | 730                                     | 6.7             | 0.3   |
|                      | و                | 6 314066 5   | 500688                | ය<br>ග                                  | POT. RICHARDSONI<br>POT. ZOSTERIFORM                     | 26.7<br>2.1             | 87<br>0.0           | 2400  | 730                                     | # C .           | 0.3   |
|                      |                  | 314080 5   | 500694                | 7.0                                     | NITELLA HYALINA<br>Pot. Narrow                           | 85.7<br>13.1            | 18.7<br>8.4         | 3500  | 1100                                    | o.s             | o . 3 |
|                      |                  | 2 314080 5   | 500694                | 7.0                                     | NITELLA HYALINA<br>Pot. Narow                            | 2.4<br>80 80            | 3.6<br>3.6          | 3500  | 1100                                    | O .on           | o.3   |
|                      | e                | 314080   | 500694                | 7.0                                     | NITELLA HYALINA<br>Pot. Narrow                           | 3.0<br>2.2              | 0.5<br>6.6          | 3500  | 1100                                    | 0.5             | O.3   |
| •                    | -                | 1 314096 5   | 500706                | 7.5                                     | VALLISNERIA AMER   | <b>6</b> .8             | 5.1                 | 2600  | 1000                                    | 0.3             | 0.4   |
|                      | 7                | 314096   |                       | 7.5                                     | POT. ZOSTERIFORM<br>VALLISNERIA AMER                     | 11.3<br>11.1            | 0.4<br>7.2          | 2600  | 1000                                    | o.3             | 0.1   |
|                      |                  | 314096 5   | 500706                | 7.5                                     | NITELLA HYALINA<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER  | 6.3<br>0.6<br>1.4       | - 0<br>8 4          | 2600  | 1000                                    | O . 3           | 0.4   |
| 60                   |                  | 314078 5   | 500706                | <b>6</b> .0                             | NITELLA HYALINA<br>Pot. Narrow                           | 0.8<br>46.1             | 34.3<br>34.3        | 4 100 | 1000                                    | o. <del>1</del> | 0.0   |
|                      | • •              | 314078   | 500706                | <b>6</b> .0                             | NITELLA HYALINA<br>Pot. Narrow                           | 4 .5<br>37 .5           | 1.6<br>22.6         | 4 100 | 1000                                    | o. 1            | 0.0   |
|                      | . 1              | 314078 5   | 500706                | 0.9                                     | CHARA SPP.<br>Pot. Narrow                                | 0.0<br>55.9             | 0.2<br>30.8         | 4 100 | 1000                                    | o. 1            | 0.0   |
|                      |                  | 314079 5   | 500709                | O.<br>6                                 | POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER | 20.05<br>30.05<br>30.05 | 6.6<br>1.3<br>1.3   | 3000  | 650                                     | <b>.</b>        | 0.2   |
|                      | ro<br>L          | 5 314079 5   | 500709                | O<br>60                                 | POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER | 2.6<br>1.0<br>7.5       | 5.0<br>6.4          | 3000  | 650                                     | 4.0             | 0.5   |
|                      | 9                | 314079   | 500709                | 0.6                                     | POT. RICHARDSONI<br>POT. NARROW                          | 4,8<br>0.4              | 0.0<br>2.8          | 3000  | 650                                     | 4.0             | 0.2   |
| #<br>#<br>#<br># (5) | #<br>#<br>#<br># | 11   | 500710                |   | NITELLA HYALINA  | 28.4                    |                     | 3100  | 1100                                    | 0.4             | 0.0   |

| DOTIO 6.5 POT. MARROW   17.1   3.6 3100   1100   0.1   |      |        |         | * * *      |                                |  |   |  |             |              |          |        |
|--|------|--------|---------|------------|--------------------------------|--|---|--|-------------|--------------|----------|--------|
| 10.0   10.1   10.0   10.1   10.0   10.1   10.0   10.1   10.0   10.1   10.0   10.1   10.0   10.1   10.0   10.1   10.0   10.1   10.0   10.1    | 7    | 314092 |         | 9          | POT.                           | (  | 17.1  |  | 3100        | 1100         | 0.1      | 0.0    |
| DOTE 10.0 POT ZOSTERIFORM   DOTE 3000 530  | 6    | 314092 | 5007 10 | 9          | POT.                           | NARROW   | 19.3  | 13.3   | 3100        | 1100         | 0.4      | 0.0    |
| DOTE   DOT   NARROW   1.2   D. 6   3900   390   D. 4   | -    | 314103 | 500718  |            | P0T.                           | ZOSTERIFORM  | 0.5   | 0.2  | 3200        | 530          | 4.0      | 0.0    |
| NOTE    | 7    | 314103 | Š       | •          | P01.                           | NARROW   | 1.2   | 9.0  | 3500        | 530          | 0.4      | 0.     |
| The column   The | е    | 314103 | 500718  | 2          | CHAR/<br>POT.                  |  | 0.3   | 0.1<br>0.7   | 3500        | 530          | 0.4      |        |
| DOTE   TO POT RICHARDSONI   2.5   1.6   4000   180   0.1   |      | 314088 | 5007 18 |            | POT.<br>POT.                   | RICHARDSONI<br>ZOSTERIFORM<br>NARROW                   | 9.9   |  | 4000        | 080          | 0.       | 0.     |
| POT. RICHARDSONI   | 6    | 314088 |         | 7.0        | POT.<br>POT.<br>VALLI          | RICHARD<br>ZCSTERI<br>NARROW<br>SNERIA                 | u ~ ₹ u<br>roro i 4   | - 90 C- 00 C | <b>4000</b> | 680          | <u>.</u> | · ·    |
| DOT23 7.0 NITELLA HYALINA   75.4   25.1 3200 1000 0.5  | ю    | 314088 | 5007 18 | 7          | P07.<br>P07.<br>VALLI          | RICHARDSONI<br>NOSTERIFORM<br>NARROW<br>SNERIA AMER    | 21,1<br>45,9<br>60,1  | 20 0 0<br>0 0 0<br>0 0 0 0   | <b>4000</b> | 089          |          | -<br>0 |
| DOT. NARROW   B.9   B.0   DOT. NARROW   B.9   B.0   DOT. NARROW   B.9   B.0   DOT. NARROW   B.9   B.0   DOT. NARROW   B.4   17.2   3200   1000   O.5   | ₹    | 314094 |         | -          | NITEL<br>POT.<br>POT.<br>SAGIT | LA HYAL<br>ZOSTERI<br>NARROW<br>TARIA S                | 10.00<br>4.4.4.00   | 20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>2  | 3200        | 000 <u>1</u> | s<br>0   | o      |
| NOT23 7.0 NITELLA HYALINA  | ND . | 314094 | 500723  |            | NITER<br>POT.<br>VALLI         | LA HYALINA<br>Narrow<br>Sneria amer                    | 60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>60<br>6 | 23.0<br>5.0<br>4.5   | 3200        | 1000         | ю.<br>О  | 0.3    |
| XO728         B.O         NITELLA HYALINA         43.8         13.7         3800         350         0.1           POT. NARROW         18.4         11.5         0.2         0.2         0.2           POT. NARROW         18.4         11.5         0.2         0.2           XO728         8.0         NITELLA HYALINA         44.6         13.3         3800         350         0.1           XO728         8.0         CHARA SPP.         64.5         15.6         3800         350         0.1           XO729         8.5         CHARA SPP.         64.5         15.6         3800         350         0.1           XO729         8.5         NITELLA HYALINA         43.6         15.0         2200         360         0.2           POT. RICHARDSONI         9.9         8.1         2.6         15.0         360         0.2           POT. ZOSTERIFORM         4.1         2.6         15.0         360         0.2         0.1           POT. SOSTERIFORM         4.1         2.6         0.6         0.6         0.6         0.6  | ø    | 314094 |         | 7.0        | NITEL<br>POT.<br>VALLI         | LA HYALINA<br>NARROW<br>SNERIA AMER                    | 46.1<br>18.4<br>7.6   | 17.2<br>12.6<br>15.7   | 3200        | 1000         | s. 0     | 0.9    |
| XO728         8.0         NITELLA HVALINA         44.6         13.3         3800         350         0.1           POT. ZOSTERIFORM         6.6         3.7         3.7         0.1           VALLISNERIA AMER         7.1         5.9         15.6         3800         350         0.1           NOT28         8.0         CHARA SPP.         64.5         15.6         3800         350         0.1           VALLISNERIA AMER         3.0         2.1         2.1         2.1         0.2           VALLISNERIA HVALINA         4.3         6         15.0         2200         360         0.2           POT. RICHARDSONI         9.9         8.1         2.6         90T.         2.6         0.6           SAGITTARIA SPP.         7.6         0.6         0.6         0.6         0.6  |      | 314098 |         | 0.         | NITEL<br>POT.<br>POT.<br>VALLI | LA HYAL<br>ZOSTERI<br>NARROW<br>SNERIA                 | 6.0<br>6.0<br>6.0<br>6.0<br>6.0   | 13.7<br>0.8<br>1.5<br>0.2  | 3800        | 000          | <br>     | - · ·  |
| MO728     8.0     CHARA SPP.     64.5     15.6     3800     350     0.1       POT. NARROW     2.9     1.7       VALLISNERIA AMER     3.0     2.1       MO729     8.5     NITELLA HYALINA     43.6     15.0     2200     .360     0.2       POT. RICHARDSONI     9.9     8.1     2.6       SAGITTARIA SPP.     7.6     0.6  | 2    | 314098 |         |            | NITEL<br>POT.<br>VALLI         | LA HYALINA<br>ZOSTERIFORM<br>SNERIA AMER               | 44.6<br>6.6<br>7.7  | 13.3<br>7.8<br>5.9   | 3800        | 350          | 0        |        |
| XO729         B.5         NITELLA HYALINA         43.6         15.0         2200         ·360         0.2           POT.         RICHARDSONI         9.9         8.1         2.6           POT.         ZOSTERIFORM         4.1         2.6           SAGITTARIA SPP.         7.6         0.6  | 6    | 314098 |         | <b>6</b> 0 | CHARA<br>POT.<br>VALLI         | SPP.<br>NARROW<br>SNERIA                               | 4.0<br>8.0<br>8.0   |  | 3800        | 380          | 0.1      | 0.     |
|  | 4    | 314098 |         | 60         | NITEL<br>POT.<br>POT.<br>SAGIT | LA HYALINA<br>RICHARDSONI<br>ZOSTERIFORM<br>TARIA SPP. | 43.6<br>9.9<br>7.4  | 15.0<br>12.6<br>2.6<br>0.6   | 2200        | ·360         | 0.2      | o      |

|   | ហ      | 314098 500729         | in i   | හ<br>හ      | 044>  | 37.8<br>21.7<br>5.0<br>TRACE    | 12.7<br>15.8<br>3.0                   | 2200   | 360          |             | 0   |
|---|--------|-----------------------|--------|-------------|---|---------------------------------|---------------------------------------|--|--------------|-------------|-----|
|   | u<br>U | 6 314098 500729       | 1 1O   | 00729 8.5   |   | 88.<br>88.1. 4.6.<br>4.0.5.6.0. | 22.1<br>8.7<br>0.8<br>3.2             | 22.1 2200 360<br>8.7 2200 360<br>0.8<br>3.2<br>2.7 | 960          | 0.2         | 0.0 |
| 6 |        | 13 14 100 500735 12.5 | 500735 | 5 12.5      | VALLISNERIA A   |                                 | # # # # # # # # # # # # # # # # # # # |  | 300          |             | 0.2 |
|   | 7      | 2 314100 500735 12.5  | 50073  | 500735 12.5 | POT. NARROW<br>VALLISNERIA AMER                         | 0.2                             | 0.4                                   | 3500   | 300          |             | 0.2 |
|   | 0      | 3 314100 5            | 50073  | 5 12.5      |   | o .                             | 6.7                                   | 3500   | 6.7 3500 300 |             | 0.2 |
| 4 | -      | 14 1 314109 500741    | 50074  | 00741 9.0   |   | + 0<br>6.6<br>8.5               | 000<br>000<br>000                     | 4300   | 460          | <b>0</b> .4 | 0.2 |
|   | 2      | 2 314109              |        | 0.6<br>-    |   | 4 – R<br>0. C                   | ~ 00<br>80 10 10                      | 4300   | 460          |             | 0.2 |
|   | Ю.     | 3 314109 5            |        | 00741 9.0   | NITELLA HYALINA<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER | 7.6<br>2.1<br>2.1               | 0<br>8.0                              | •  | 1300 460     | 4.          | 0.2 |

(

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| 1 314227 500982 8.0 POT. NARROW 6.7 10.0 4 4000 2 314227 500982 8.0 POT. NARROW 1.2 0.8 4000 3 314227 500982 8.0 POT. NARROW 1.2 0.8 4000 1 314227 500982 8.0 POT. NARROW 1.2 0.8 4000 2 314227 500977 8.0 POT. NARROW 1.2 0.4 0.7 7 2 314227 500977 8.0 POT. NARROW 1.5 0.2 4 100 3 314207 500977 8.0 POT. NARROW 1.5 0.2 1.8 4100 2 314207 500977 8.0 POT. CRISPUS 2 314207 500976 8.0 POT. CRISPUS 2 314207 500976 8.0 POT. CRISPUS 3 314207 500976 8.0 POT. CRISPUS 2 314207 500976 8.0 POT. CRISPUS 3 314207 500976 8.0 POT. CRISPUS 4 314207 500976 8.0 POT. CRISPUS 5 314207 500976 8.0 POT. CRISPUS 6 3 314207 500976 8.0 VALLISNERIA AMER 2.7 1.1 4000 1 314228 500984 8.0 VALLISNERIA AMER 6.1 6.3 5.0 5.0 2 314208 500984 8.0 VALLISNERIA AMER 1.5 6.0 4000 3 314208 500984 8.0 VALLISNERIA AMER 1.5 6.0 4000 4 314228 500984 8.0 VALLISNERIA AMER 1.5 6.0 4000 4 314228 500984 8.0 VALLISNERIA AMER 1.5 6.0 4000 4 314228 500984 8.0 VALLISNERIA AMER 1.5 6.0 4000 4 314228 500984 8.0 POT. CRISPUS 6 314228 500984 8.0 POT. CRISPUS 7 6 4000 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | RIVER | ISLAND | BLOC<br>NO.   | REPLICATE<br>NO.       | COORE<br>UPPER | COORDINATES<br>UPPER LOWER | DEPTH<br>(FT.) | MACROPHYTE<br>Taxon   | DRY WEIGHT (G/M2)          | ASH-FREE L<br>WEIGHT<br>(G/M2)        | LIGHT (FOOT      | - ii - i | CURRENT (FT  | F./SEC.) |
|---|-------|--------|---------------|------------------------|----------------|----------------------------|----------------|---|----------------------------|---------------------------------------|------------------|----------|--|----------|
| 2 314227 500982 8.0 POT. NARROW 1.2 0.8 4000 120 3 314227 500982 8.0 POT. NARROW 10.6 0.8 4000 120 3 314227 500982 8.0 POT. NARROW 10.6 0.7 4100 150 POT. NARROW 10.6 0.7 4100 150 POT. NARROW 2.0 POT. NARROW 2.0 1.8 4100 150 2 314277 500977 8.0 POT. NARROW 2.0 1.8 4100 150 3 314277 500977 8.0 POT. NARROW 2.0 1.8 4100 150 2 314207 500976 8.0 POT. NARROW 2.1 1.4 3700 160 3 314207 500976 8.0 VALLISNERIA AMER 2.1 1.4 3700 160 2 314207 500976 8.0 VALLISNERIA AMER 2.1 1.4 3700 160 3 314208 500984 8.0 VALLISNERIA AMER 1.5 1.1 4000 180 2 314208 500984 8.0 VALLISNERIA AMER 1.5 1.1 4000 180 3 314208 500984 8.0 VALLISNERIA AMER 1.5 5.6 2.0 3500 71 3 314208 500984 8.0 VALLISNERIA AMER 1.5 5.6 2.0 3500 71 3 314208 500984 8.0 VALLISNERIA AMER 1.5 5.6 2.0 3500 180 3 314228 500984 8.0 VALLISNERIA AMER 1.5 5.6 5.6 5.6 5.6 5.6 5.6 5.6 5.6 5.6 5   | TROIT | STONY  | -             | -                      | 314227         | 7 500982                   | 80<br>O:       |   | 0.7<br>16.1                | 0.0<br>4.0                            | 4000             | 120      | د.<br>ت  | 4.2      |
| 1 31427 500882 8.0 POT. NARROW 1.5 6.3 4000 120 POT. NARROW 1.5 6.3 4000 120 POT. NARROW 1.5 6.3 4100 150 POT. NARROW 1.5 6.3 7.4 100 150 POT. NARROW 1.5 6.0 7 4100 150 POT. NARROW 1.5 6.0 7 4100 150 POT. NARROW 1.5 6.0 7 4100 150 POT. NARROW 1.5 6.0 7 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |       |        |               |                        | 314227         | 7 500982                   | o.             |   |                            | 9.0<br>9.0                            | 4000             | 120      |  | 4.2      |
| 1 314217 500977 8.0 MYRIO. SPICATUM 0.4 0.2 4100 150  2 314217 500977 8.0 PUT. IMARROW 16 0.7  2 314217 500977 8.0 PUT. MARROW 15 0.2 0.1 3700 150  3 314217 500977 8.0 PUT. MARROW 5.6 3.4 4100 150  4 0.2 0.1 3700 150  5 314207 500976 8.0 PUT. CRISPUS 0.2 0.1 3700 150  7 1 314207 500976 8.0 PUT. CRISPUS 0.2 0.1 3700 150  9 314207 500976 8.0 PUT. CRISPUS 0.2 0.1 3700 150  1 314207 500976 8.0 PUT. CRISPUS 15.4 17 1.7  2 314207 500976 8.0 VALLISMERIA AMER 2.1 1.4 3700 150  3 314207 500975 10.0 VALLISMERIA AMER 6.1 4.5 3500 71  3 314208 5009876 10.0 VALLISMERIA AMER 1.5 1.1 4000 180  2 314208 5009876 10.0 VALLISMERIA AMER 1.5 1.1 4000 180  3 314208 5009876 10.0 VALLISMERIA AMER 1.5 1.1 4000 180  3 314208 5009876 10.0 VALLISMERIA AMER 1.5 1.1 4000 180  4 314208 500984 8.0 VALLISMERIA AMER 1.5 1.1 500 180  5 314208 500984 8.0 PUT. MARROW 1.6 0.9 4000 180  5 314208 500984 8.0 PUT. MARROW 1.5 0.9 0.6  5 314208 500984 8.0 PUT. MARROW 1.5 0.9 0.6  5 314208 500988 4.0 ELDOEA CANADENS 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2                            |       |        |               |                        | 314227         | 7 500982                   | 0              | <b>H</b>  | # H 2                      | 80.00<br>80.00                        | 4000             | 120      | H 10<br>H 10<br>H 10<br>H 10<br>H 10<br>H 11<br>H 11<br>H 11 | . 2      |
| 2 314217 500977 8.0 POT. NARROW 5.6 3.7 4100 150 3 314217 500977 8.0 POT. NARROW 5.6 3.7 1.8 4100 150 1 314207 500976 8.0 POT. CRISPUS 0.2 0.1 3700 160 2 314207 500976 8.0 POT. CRISPUS 0.2 0.1 3700 160 2 314207 500976 8.0 POT. CRISPUS RACE 11.2 1.4 3700 160 1 314207 500976 8.0 VALLISNERIA AMER 2.1 1.4 3700 160 2 314200 500975 10.0 VALLISNERIA AMER 2.1 1.4 3700 160 3 314200 500975 10.0 VALLISNERIA AMER 6.1 4.2 2.4 3500 71 1 314220 500975 10.0 VALLISNERIA AMER 1.5 1.4 4000 180 2 314220 500975 10.0 VALLISNERIA AMER 1.5 1.4 4000 180 2 314220 500984 8.0 VALLISNERIA AMER 1.5 1.4 4000 180 3 314228 500984 8.0 POT. NARROW 1.6 3.7 2.4 4000 180 3 314228 500984 8.0 POT. NARROW 1.6 3.7 2.4 4000 180 4 314228 500984 8.0 POT. NARROW 1.6 3.7 2.4 4000 180 4 314228 500984 8.0 POT. NARROW 1.6 3.7 2.4 4000 180 4 314228 500988 4.0 ROMENS 2.5 5.5 500 17 3.6 501 100 100 100 100 100 100 100 100 100  |       |        | 6             |                        | 314217         |                            | O<br>60        | MYRIO. SPICATUM<br>NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER | 0.4<br>1.6<br>1.5<br>4.7   | 0.2<br>0.7<br>0.7<br>8                | 4 100            | 150      |  | 0.5      |
| 3 314217 500977 8.0 PDT. MARROW 5 0.2 0.1 3700 160 PDT. MARROW 0.2 0.1 3700 160 PDT. MARROW 0.2 0.1 3700 160 PDT. MARROW 0.2 0.1 3700 160  2 314207 500976 8.0 PDT. CRISPUS 1 314207 500976 8.0 PDT. CRISPUS 2 314207 500975 10.0 VALLISNERIA AMER 1 314200 500975 10.0 VALLISNERIA AMER 1 314208 500975 10.0 VALLISNERIA AMER 1 314228 500984 8.0 PDT. MARROW 1 5 14228 500984 8.0 PDT. MARROW 1 6 3 14228 500984 8.0 PDT. MARROW 1 7 6 7 6 PDT. MARROW 1 8 7 7 6 PDT. MARROW 1 1 1 2 7 6 PDT. MARROW 1 1 1 2 7 6 PDT. MARROW 1 2 314228 500984 8.0 PDT. MARROW 1 3 7 2.4 4000 180 PDT. CRISPUS 2 314224 500988 4.0 ELDORA CANADENS 3 314224 500988 4.0 ELDORA CANADENS 4 2 3.5 51   |       |        |               |                        | # 1            |                            | 9.0            | NARROW<br>I SNERIA  | o<br>K<br>K<br>K<br>V<br>V | 2.4                                   | 4 100            | 150      |  | 0.2      |
| 1 314207 500976 8.0 PDT. CRISPUS 0.2 0.1 3700 160 PDT. NARROW 0.2 0.1 3700 160 PDT. NARROW 0.2 0.1 3700 160 PDT. NARROW 0.2 0.1 3700 160 150 VALLISNERIA AMER 15.4 11.2 3700 160 160 1 314200 500975 10.0 VALLISNERIA AMER 6.1 4.5 3500 71 1 314200 500975 10.0 VALLISNERIA AMER 6.1 4.5 3500 71 1 314200 500975 10.0 VALLISNERIA AMER 1.5 1.1 4000 180 110 2 314228 500984 8.0 VALLISNERIA AMER 1.5 5.1 4 4000 180 180 VALLISNERIA AMER 1.5 5.4 5 0.8 4000 180 VALLISNERIA AMER 16.3 10.2 162 162 162 162 163 162 163 163 163 163 163 163 163 163 163 163  |       |        |               | :<br>:<br>: (7)        | 31421          | 7 500977                   | <b>6</b> 0.0   | NARROW<br>I SNER I A  |                            | # # # # # # # # # # # # # # # # # # # | 4 100            | 150      |  | 0.2      |
| 2 314207 500976 8.0 POT. CRISPUS TRACE 11.2 3 314207 500976 8.0 VALLISNERIA AMER 2.1 1.4 3700 160 1 314200 500975 10.0 VALLISNERIA AMER 6.1 4.5 3500 71 2 314200 500975 10.0 VALLISNERIA AMER 4.2 2.4 3500 71 1 314200 500975 10.0 POT. CRISPUS 3.6 2.0 3500 71 1 314228 500984 8.0 VALLISNERIA AMER 15.0 0.9 4000 180 2 314228 500984 8.0 POT. NARROW 1.6 0.9 0.6 8 UTOMUS UMBELLAT 07.6 54.5 10.2 8 UTOMUS UMBELLAT 07.6 54.5 10.2 8 UTOMUS UMBELLAT 07.6 10.2 8 UTOMUS UMBELLAT 17.2 4 4000 180 1 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 1 314228 500988 4.0 ELODEA CANADENS 12.6 8.2 1 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1 2 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1 2 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1 2 314224 500988 4.0 ELODEA CANADENS 606.6 25.5  |       |        | m             |                        | 31420          |                            | 0<br>60        | CRISPUS<br>NARROW<br>ISNERIA  |                            | 00-                                   | 3700             | ¢60      | 9.0  | 9.0      |
| 3 314207 500976 8.0 VALLISNERIA AMER 2.1 1.4 3700 160 2 314200 500975 10.0 VALLISNERIA AMER 6.1 4.2 2.4 3500 71 3 314200 500975 10.0 VALLISNERIA AMER 1.5 1.1 4000 180 1 314228 500984 8.0 VALLISNERIA AMER 1.6 0.9 4000 180 2 314228 500984 8.0 POT. NARROW 1.6 0.9 4000 180 3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 4 314224 500988 4.0 ELODEA CANADENS 233.2 159.4 4200 1 7 3 314224 500988 4.0 ELODEA CANADENS 666.6 487.4 4200 1 7 3 314224 500988 4.0 ELODEA CANADENS 666.6 487.4 4200 1 7 3 314224 500988 4.0 ELODEA CANADENS 666.6 25.5  |       |        |               | 2                      | 31420          |                            | <b>8</b> 0.0   | CRISPUS<br>ISNERIA  | TRA                        | 11.2                                  | 3700             | 160      | 9·0  | 9.0<br>• |
| 1 314200 500975 10.0 VALLISNERIA AMER 6.1 4.5. 3500 71 2 314200 500975 10.0 VALLISNERIA AMER 4.2 2.4 3500 71 3 314208 500984 8.0 VALLISNERIA AMER 1.5 1.1 4000 180 2 314228 500984 8.0 VALLISNERIA AMER 16.3 10.2 8 UTDMUS UMBELLAT 107.6 54.5 8 UTDMUS UMBELLAT 0.9 4000 180 VALLISNERIA AMER 16.3 10.2 8 UTDMUS UMBELLAT 0.9 0.6 1 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 VALLISNERIA AMER 11.2 7.6 1 314224 500988 4.0 ELDDEA CANADENS 233.2 159.4 4200 1 1 314224 500988 4.0 ELDDEA CANADENS 12.6 8.2 2 314224 500988 4.0 ELDDEA CANADENS 606.6 487.4 4200 1 1 314224 500988 4.0 ELDDEA CANADENS 606.6 487.4 4200 1 1 314224 500988 4.0 ELDDEA CANADENS 12.9 2.5  |       |        |               | 0                      | 31420          |                            |                |   |                            | 4.                                    | 3700             | 160      | 9.0  | 9.0      |
| 2 314200 500975 10.0 VALLISNERIA AMER 4.2 2.4 3500 71 3 314200 500975 10.0 POT. CRISPUS 3.6 2.0 3500 71 1 314228 500984 8.0 VALLISNERIA AMER 1.5 1.1 4000 180 2 314228 500984 8.0 POT. NARROW 1.6 0.9 4000 180 3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 4 314224 500988 4.0 ELODEA CANADENS 233.2 159.4 4200 1 2 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1 2 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1 3 314224 500988 4.0 ELODEA CANADENS 7.3 5.1 POT. CRISPUS 12.9 2.5   |       |        | 4             | -                      | 314200         |                            | 10.0           |   | 6.1                        | 4 .5.                                 | 3500             | 7.1      | 0.2  | 0.0      |
| 1 314228 500984 8.0 VALLISNERIA AMER 1.5 1.1 4000 180 2 314228 500984 8.0 VALLISNERIA AMER 1.6 54.5 8UTOMUS UMBELLAT 107.6 54.5 8UTOMUS UMBELLAT 0.9 4000 180 3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 4 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 4 314224 500988 4.0 ELODEA CANADENS 233.2 159.4 4200 1 7 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1 8 2 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1 8 2 314224 500988 4.0 ELODEA CANADENS 606.6 187.4 4200 1   |       |        |               | 7                      | 314200         |                            | 0.0            | <   | 4.2                        | 2.4                                   | 3500             | 71       | 0.2  | 0.0      |
| 1 314228 500984 8.0 VALLISNERIA AMER 1.5 1.1 4000 180 2 314228 500984 8.0 POT. NARROW 1.6 0.9 4000 180 3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 4 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 5 314224 500988 4.0 ELODEA CANADENS 233.2 159.4 4200 1 6 MYRID. SPICATUM 12.6 8.2 POT. CRISPUS 7.3 5.1 7.3 5.1 POT. CRISPUS 12.9 2.5 POT. CRISPUS 12.9 2.5  |       |        |               | - 1                    | 314200         |                            | 10.0           | POT. CRISPUS  | 3.6                        | 2.0                                   | 3500             | 7.1      | 0.2  | o.<br>0  |
| 2 314228 500984 8.0 POT. NARROW 1.6 0.9 4000 180  VALLISNERIA AMER 16.3 10.2 BUTOMUS UMBELLAT 0.9 0.6  3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180  VALLISNERIA AMER 11.2 7.6  1 314224 500988 4.0 ELODEA CANADENS 233.2 159.4 4200 1  POT. CRISPUS 606.6 487.4 4200 1  NITELLA HYALINA TRACE 2.5  |       |        |               |                        | 314228         |                            | <b>8</b> .0    | VALLISNERIA AMER<br>BUTOMUS UMBELLAT                                  | 101                        | t<br>t                                | 4000             | 180      | 6  | 9.0      |
| 3 314228 500984 8.0 POT. NARROW 3.7 2.4 4000 180 VALLISNERIA AMER 11.2 7.6  1 314224 500988 4.0 ELODEA CANADENS 233.2 159.4 4200 1  MYRIO. SPICATUM 12.6 8.2  MYRIO. SPICATUM 7.3 5.1  2 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1  POT. CRISPUS 12.9 2.5  |       |        |               |                        | 314226         | 500984                     | 0.             | POT. NARROW<br>VALLISNERIA AMER<br>BUTOMUS UMBELLAT                   | a 6<br>6. 3<br>6. 9        | 0.00<br>0.00<br>0.00                  | 4000             | 180      | 6.   | 9.<br>O  |
| † 314224 500988 4.0 ELDDEA CANADENS 233.2 159.4 4200 † MYRID. SPICATUM 12.6 8.2 POT. CRISPUS 7.3 5.1 2 314224 500988 4.0 ELDDEA CANADENS 606.6 487.4 4200 † NITELLA HYALINA TRACE 2.5   |       |        |               |                        | 314226         |                            | 0.             | NARROW<br>  SNERIA  |                            | 2.4<br>7.6                            | <del>4</del> 000 | 180      | 6.   | 9.0      |
| 2 314224 500988 4.0 ELODEA CANADENS 606.6 487.4 4200 1<br>NITELLA HALINA TRACE 2.5<br>PDT. CRISPUS 12.9 2.5   |       |        | ж<br>н<br>н Ф | H<br>F<br>H **<br>H ** | K              | 4 500988                   | 0.4            | ELODEA CANADENS<br>MYRIO, SPICATUM<br>POT. CRISPUS                    | 233.2<br>12.6<br>7.3       | 159.4<br>8.2<br>5.1                   | 4200             |          | 0.0  | o.<br>o  |
| 1 0.1.  |       |        |               | # 6                    | #              | 4 500988                   | 0.4            | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. CRISPUS                    | 606.6<br>TRACE<br>12.9     | 487.4                                 | 4200             |          | o.o  | o.<br>o  |

|    |      | 3 314224 E | 500988        | 4.0            | ELODEA CANADENS                                      | 287.2                         | 208.6                   | 4200 | *************************************** | 0.0      | 0.0                                     |
|----|------|------------|---------------|----------------|--|-------------------------------|-------------------------|------|---|----------|---|
|    | 4    | 4 314221 9 | 500985        | 0.4            | ELODEA CANADENS ELODEA CANADENS POT. CRISPUS         | 59.3<br>119.5                 | 42.8<br>86.0            | 3500 |   | 0.0      | 0.0                                     |
|    | មា   | 314221 E   | 314221 500985 | 4.0            | ELODEA CANADENS POT. CRISPUS                         | 43.7                          | 30.7                    | 3500 | #<br>#<br>#<br>#<br>#<br>#<br>#<br>#    | 0.0      | 0.0                                     |
|    | 9    | 6 314221   | 500985        | 0.4            | ELODEA CANADENS<br>POT. CRISPUS                      | 13.4<br>13.4<br>154.8         | 9.7                     | 3500 |   | 0.0      | 0.0                                     |
| 7  | -    | 7 1 314233 | 500994        | 5.5            | POT. CRISPUS<br>POT. NARROW                          | 82.6<br>TRACE                 | # 9 .<br># 9 .<br># 9 . | 3500 | 200                                     | . O      | и<br>е О<br>и 4 . О<br>и                |
|    | 2    | 2 314233   | 500994        | ى              | HETERANTHERA DUB<br>POT. CRISPUS<br>VALLISNERIA AMER | 6.7<br>227.7<br>TRACE         | 3.9                     | 3500 |   |          | # O # O # O # O # O # O # O # O # O # O |
|    | e    |            | 500994        | ນ<br>ນ         | POT. CRISPUS<br>VALLISNERIA AMER                     | 242.4<br>TRACE                | 183.7                   | 3500 | 200                                     | 6.0      | 0.4                                     |
| 60 | -    | 314213     | 500985        | <b>4</b><br>0. | ELODEA CANADENS<br>POT. CRISPUS                      | 286.6<br>116.0                | 221.8                   | 3800 |   | 0.0      | 0.0                                     |
|    | 2    | 2 314213   | 500985        | 0.4            | ELODEA CANADENS<br>Pot. Crispus                      | 21.3<br>227.6                 | 15.9<br>196.5           | 3800 | 53                                      | 0.0      | 0.0                                     |
|    |      |            | 500985        | 4<br>0         | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. CRISPUS   | 14.0<br>0.5<br>298.0          | 9.8<br>0.3<br>201.7     | 3800 | 5<br>3                                  | 0.0      | 0.0                                     |
| o  | - 46 |            |               | 111            | NO PLANTS NO PLANTS NO PLANTS                        | PRESENT<br>PRESENT<br>PRESENT | Mi                      |      | f   f                                   |          |   |
| 0, | ~    | 1 314230   | 314230 500995 | <b>4</b><br>0  | ELODEA CANADENS<br>HETERANTHERA DUB<br>POT. CRISPUS  | 1, 5<br>1, 5<br>180.2         | 0.9<br>3.0<br>111.2     | 3000 | 4                                       | 0<br>- 1 | 0.0                                     |
|    | 5    | 2 314230   | 500995        | 0.4            | POT. CRISPUS   | 210.0                         | 115.1                   | 3000 | 4                                       | 0.1      | 0.0                                     |
|    | ო    | 3 314230   | 500995        | 4<br>0         | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. CRISPUS   | TRACE<br>TRACE<br>98.3        | 75.8                    | 3000 | 4                                       | 0.1      | 0.0                                     |
| =  | - 96 | 111        | 111           |                | NO PLANTS NO PLANTS NO PLANTS NO PLANTS              | PRESENT<br>PRESENT<br>PRESENT |                         |      | 111                                     |          | 1 1 1                                   |

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER IS       |      | BLOCK<br>NO. | REPL<br>NO | E LORA<br>COORDIN<br>UPPER | ₹ Ž                        | DEPTH<br>(FT.)       | MACE                                   | MACROPHYTE<br>Taxon  |                                | ASH-FREE L<br>WEIGHT<br>(G/M2)   | LIGHT (FOOT                   |                            | CURRENT(FT./SEC                         | (./SEC.)           |
|----------------|------|--------------|------------|----------------------------|----------------------------|----------------------|--|--|--------------------------------|--|-------------------------------|----------------------------|---|--------------------|
| ST. CLAIR STAG | , AG |              | - 20       | 309021<br>309021<br>309021 | । वंचे वं                  | 22.0<br>0.00         |  |  | PRESENT<br>PRESENT<br>PRESENT  | - で  | 3500<br>3500<br>3500          | 1500<br>1500<br>1500       | 0.00                                    | 2.6                |
|                |      |              | 35-        | 309037<br>309037<br>309037 | 444                        | 2.52<br>8.53<br>8.53 |  |  | PRESENT<br>PRESENT<br>PRESENT  | To the state of th | 3 100<br>3 100<br>3 100       | 1100<br>100<br>100         | 2 2 2 8                                 |                    |
|                |      |              | - 00       | 309023<br>309023<br>309023 | . 4 4 4 4 4                | ; .                  |  | PLANTS<br>PLANTS<br>PLANTS                                 |                                |  | 3300                          | 1200<br>1200<br>200        | 2 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 25.3<br>2.3<br>3.3 |
|                |      | 4            | 35-        | 309039                     | 497392<br>497392<br>497392 | 000                  | #<br>#<br>#<br>#                       | NO PLANTS<br>NO PLANTS<br>NO PLANTS                        | PRESENT<br>PRESENT<br>PRESENT  | W<br>W<br>W<br>W<br>W<br>W<br>W<br>W<br>W  | e e e<br>80 6<br>80 6<br>80 6 | 9<br>9<br>9<br>9<br>9<br>9 | 2.0<br>0.0<br>0.0<br>0.0                | 0 0 0 0<br>0 0 0 0 |
|                |      |              | - C1 C0    | 309034<br>309034<br>309034 | 444                        | 0 0 0<br>0 0 0       |  | NO PLANTS<br>NO PLANTS<br>NO PLANTS                        | PRESENT<br>PRESENT<br>PRESENT  |  | 3500<br>3500<br>3500          | 2100<br>2100<br>2100       | 2 7 7 3<br>9 80 83                      | 200                |
|                |      | i<br>)       | -          | 309040                     | 497399                     | 4<br>0               | CHARA SPP.<br>Pot. Grami<br>Pot. Narro | SPP<br>GRAMINEUS<br>NARROW                                 | 414.2<br>17.5<br>34.1          | 131.0<br>10.6<br>11.8  | 4                             | 1300                       | 9.                                      | 1.2                |
|                |      |              |            | 309040                     | 497                        | 0.<br>4              | CHARA<br>POT. 9                        | SPP.   | 311.8<br>2.6                   | 74.5<br>2.1  | 4200                          | 1300                       | ~<br>9.                                 | 1.2                |
|                |      |              |            | 309040                     | 497388                     | o.<br>•              | • • •                                  | SPP.<br>GRAMINEUS  | 314.7<br>27.6                  | 85.6<br>19.9   | 4200                          | 1300                       | 9.                                      | 1.2                |
|                |      | -            | -          | 308034                     | 497400                     | 0<br><b>9</b>        |  | SPP.<br>A CANADENS<br>J. SPICATUM<br>RICHARDSONI<br>NARROW | 4.6<br>8.7.8<br>8.7.0<br>6.7.0 | 20.02<br>7.1.0<br>7.1.0<br>7.1.0<br>7.1.0<br>8.1.0   | 4700                          | 79<br>78                   | 89.<br>O                                | •<br>•             |
|                |      |              | 7          | 309034                     | 497400                     | o.<br>•              | 4 W O                                  | SPP. A CANADENS A CANADENS RICHARDSONI NARROW              | 23.1<br>23.1<br>20.7<br>41.8   | 7 1 4 7 7 7 9 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9  | 4700                          | <b>78</b>                  | <b>8</b> .                              |                    |
|                |      |              | m          | 309034                     | 497400                     | O.<br>v              | CHARA<br>ELODEA<br>MYRIO<br>POT. R     | A SPP.  EA CANADENS O. SPICATUM RICHARDSONI NARROW         |                                | 0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.0  | 4700                          | 28                         | &<br>•                                  | •<br>•             |
|                |      |              | 4          | 309034                     | 497400                     | 5.0                  |  | A CANADENS<br>RICHARDSONI<br>NARROW                        | C. 00<br>C. 00<br>C. 00        | 0.4<br>7.9<br>4.04   | 4500                          | 1000                       | <b>8</b> .0                             | 0.0                |

)

| P          | 309034 4    | 497400 | 5.0      | CHARA SPP.<br>Pot. Richardsoni<br>Pot. Narrow                     | 1.1<br>110.6<br>60.2       | 0.4<br>84.6<br>44.8        | 4500 | 000  | 80.0            | 0.0               |
|------------|-------------|--------|----------|---|----------------------------|----------------------------|------|------|-----------------|-------------------|
|            | 309034 4    | 497400 | O. 23    | ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW                | 211.5<br>191.2<br>104.3    | 61.7<br>71.3<br>76.2       | 4500 | 1000 | <b>8</b> 0.0    | 0.0               |
|            | 309033 4    | 497402 | 0.0      | CHARA SPP.<br>Pot. Narrow   | 277.6<br>1.2               | 81.2<br>0.8                | 2700 | 2600 | 1.2             | 1.0               |
| <b>6</b> 0 | 8 309033 4  | 497402 | ٥.<br>٥. | CHARA SPP.<br>POT. GRAMINEUS<br>ZANN. PALUSTRIS                   | 98<br>2.2<br>2.5           | 24.7<br>2.6<br>1.7         | 2700 | 2600 | 1.2             | 0.                |
| თ          | 309033      | 497402 | ۵.<br>ن  | CHARA SPP.<br>Pot. Narrow   | 601.4<br>TRACE             | 115.3                      | 2700 | 2600 | 1.2             | 0                 |
| -          | 309042      | 497404 | 5. 7     | EA.   | 145.2                      | 4.2                        | 4300 | 73   |                 | 0.1               |
| 2          | 309042      | 197404 | ت.<br>م  | MYRIO. SPICATUM<br>POT. RICHARDSONI                               | 80.8<br>21.4               | 46.5<br>17.8               | 4300 | 73   | 0.2             | 0.1               |
|            | 309042 4    | 497404 | τ.<br>-  |   | 0.5<br>94.3<br>11.0        | 0.2<br>17.7<br>69.3<br>9.3 | 4300 | 73   | 0<br>.2         | <del>-</del><br>0 |
| 4          | 4 309047 49 | 497406 | 7.1      | CHARA SPP.<br>Pot. Richardsoni<br>Pot. Narrow                     | 276.4<br>5.3<br>19.0       | 184.0<br>4.1<br>14.5       | 4200 | 1800 | 1.2             | O<br>.5           |
| QJ         | 309047 4    | 497406 | 7.1      | CHARA SPP.<br>Pot. Narrow   | 0.2<br>15.0                | 0.1<br>12.1                | 4200 | 1800 | 1.2             | O . 57            |
| ဖ          | 309047      | 497406 | 7.1      | NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW                | 0.4<br>29.9<br>16.2        | 0.1<br>23.5<br>12.5        | 4200 | 1800 | 1.2             | 0.5               |
| ~          | 1 309039 4  | 497406 | 9.6      | POT. CRISPUS<br>POT. RICHARDSONI                                  | 29. 4<br>4. 0              | 20.8<br>7.9                | 4900 | 750  | O. <del>1</del> | 0.4               |
| ۲,         | 2 309039 4  | 497406 | 6.<br>80 | ELODEA CANADENS<br>POT. CRISPUS<br>POT. RICHARDSONI               | 62.1<br>5.4                | 55.0<br>3.9                | 4900 | 750  | o. <del>1</del> | o<br>             |
| က          | 309039      | 497406 | න<br>න   | ELODEA CANADENS<br>POT. CRISPUS                                   | 12.2<br>47.8               | 8.8<br>40.0                | 4900 | 750  | 0.4             | 0.1               |
| n (        | 309036 4    | 497405 | 10.0     | ELCOEA CANADENS<br>NITELLA HYALINA                                | 180.0<br>5.4               | 79.7                       | 3000 | 180  | 0.7             | 0.0               |
| ហ          | 5 309036 4  | 497405 | 10.0     | CHARA SPP<br>ELODEA CANADENS<br>MYRIO SPICATUM<br>POT RICHARDSONI | 9.4<br>97.0<br>4.8<br>24.8 | 3.9<br>65.9<br>3.6<br>20.6 | 3000 | 180  | 0.7             | ÷ .               |
| ဖ          | 309036 4    | 497405 | 10.0     | CHARA SPP. ELODEA CANADENS  | 3.8                        | 1.5                        | 3000 | 180  | 0.7             | 0.4               |

| 145.0   145. | •   | 7  | 7 309040 49 | 497402     | 3.0   | CHARA SPP.  | 50.4  | 19.3   | 4000                                       | 3500       | <b>o</b> .                            | 0.1     |
|--|-----|----|-------------|------------|-------|---|---|--|--|------------|---------------------------------------|---------|
| 9 309040 497402 3.0 CHARA SPP. 67.0 24.8 4000 1 308056 497414 6.5 ELODEA CANADENS 17.4 3.8 4000 2 308056 497414 6.5 ELODEA CANADENS 17.4 3.8 820 1 308056 497414 6.5 CHARA SPP. 80.5 21.5 820 1 308056 497414 6.5 CHARA SPP. 80.5 21.5 820 1 308056 497414 6.5 CHARA SPP. 11.4 1 20.5 21.5 820 1 308056 497414 6.5 CHARA SPP. 11.4 1 20.5 21.5 820 1 308056 497414 6.5 CHARA SPP. 11.4 1 20.5 20.5 21.5 820 2 308054 497414 6.5 CHARA SPP. 0.1 14.4 1 20.5 4400 2 308054 497414 6.5 CHARA SPP. 12.2 0.5 4400 2 308054 497411 7.0 CHARA SPP. 12.4 10.6 80.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0  |     | 80 | 309040      |            |       | CHARA SPP.  | 145.0   | 43.3   | 4000                                       | 3500       |                                       | . 0     |
| 1 309056 497414 6.5 ELDDEA CANADENS 1 7 1 3 2 8 20 2 3090056 497414 6.5 ELDDEA CANADENS 3 309056 497414 6.5 ELDDEA CANADENS 3 309056 497414 6.5 ELDDEA CANADENS 1 1 2 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 5 8 20 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | 1   | 6  | 309040      |            |       |   | 67.0  | 24.8   | 4000                                       | 3500       | 0<br>                                 | 0.4     |
| 2 309056 497414 6.5 FLODEA CANDENS 3 309056 497414 6.5 CLODEA CANDENS 1 309056 497414 6.5 CLODEA CANDENS 1 309047 497408 5.5 CHARA SPP. 2 309047 497408 5.5 CHARA SPP. 3 309054 497411 7.0 CHARA SPP. 4 309054 497411 7.0 CHARA SPP. 5 309054 497411 7.0 CHARA SPP. 6 309054 497411 7.0 CHARA SPP. 7 309047 497412 6.5 ELODEA CANDENS 2 309047 497412 6.5 ELODEA CANDENS 3 309047 497412 6.5 ELODEA CANDENS 4 309047 497412 6.5 ELODEA CANDENS 5 309047 497412 6.5 ELODEA CANDENS 6 309040 497409 3.0 CHARA SPP. 7 4 5 100   |     |    | 309056      | !!         | 9     |   | 47.4<br>17.4<br>89.8                          | 13.2   | 8 50 8 6 8 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | M          |                                       | o.o     |
| 3 309056 497414 6.5 CHARA SP. 4.3 1.5 820  1 309047 497408 5.5 CHARA SP. 7.7 8  1 309047 497408 5.5 CHARA SP. 7.7 8  2 309047 497408 5.5 CHARA SP. 7.7 8  3 309047 497417 7.0 CHARA SP. 7.8 1.2 0.5 4400  5 309054 497411 7.0 CHARA SP. 7.9 1.0  5 309047 497412 6.5 ELODEA CANADENS 88.1 54.8 750  9 309047 497412 6.5 ELODEA CANADENS 88.1 54.8 750  9 309047 497412 6.5 ELODEA CANADENS 88.1 54.8 750  9 309047 497412 6.5 ELODEA CANADENS 88.1 55.8 750  9 309047 497412 6.5 ELODEA CANADENS 88.1 55.8 750  9 309047 497412 6.5 ELODEA CANADENS 88.1 30.3 25.8 750  9 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750  9 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750  9 309040 497409 3.0 CHARA SP. 710.0 66.6 66.6 66.6 670  1 309040 497409 3.0 CHARA SP. 710.0 66.6 66.6 66.6 670  2 309040 497409 3.0 CHARA SP. 710.0 66.6 66.6 66.6 670  2 309040 497409 3.0 CHARA SP. 710.0 66.6 66.6 66.6 670  2 309040 497409 3.0 CHARA SP. 710.0 66.6 66.6 66.6 670  2 309040 497409 3.0 CHARA SP. 710.0 66.6 66.6 66.6 670  3 309040 497409 3.0 CHARA SP. 710.0 66.6 66.6 66.6 66.6 66.6 66.6 66.6   | •   | 2  | 309056      |            | 9     |   | 50.5  | 21.5   | 820  | 110        | # C . +                               | 0.0     |
| 1 309047 497408 5.5 CHARA SPP. 0.1 0.0 4400  1 309047 497408 5.5 ELODEA CANADENS 2 309047 497408 5.5 ELODEA CANADENS 3 309047 497417 7.0 CHARA SPP. 201.2 2 309047 497412 6.5 ELODEA CANADENS 3 309047 497412 6.5 ELODEA CANADENS 4 309040 497409 3.0 CHARA SPP. 239.6 6 309040 497409 3.0 CHARA SPP. 239.6 7 309040 497409 3.0 CHARA SPP. 239.6 8 309040 497409 3.0 CHARA SPP. 239.6 8 309040 497409 3.0 CHARA SPP. 239.6 9 309040 497409 3.0 CHARA SPP. 239.6 1 309040 497409 3.0 CHARA SPP. 239.6 6 509040 497409 3.0 CHARA SPP. 239.6 6 509040 497409 3.0 CHARA SPP. 239.6 7 309040 497409 3.0 CHARA SPP. 239.6 7 50040 497409 3.0 CHARA SPP. 239.6 7 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6  |     | е  | 309056      |            |       | . <b>₹</b> ₩                                      | 4.3<br>3.0<br>4.1<br>1.2                      | 1.5<br>27.8<br>79.8  | 20 H<br>20 H<br>30 H<br>30 H<br>30 H       |            |                                       | 0.0     |
| 2 309047 497408 5.5 ELODEA CANADENS 2.3 1.1 4400  NITELLA HYALINA 1.4 0.6 POT. RICHARDSONI 59.6 37.9 POT. RICHARDSONI 15.4 86.2  4 309047 497408 5.5 CHARA SPP. 201.2 24.7 1100  5 309054 497411 7.0 CHARA SPP. 201.2 24.7 1100  6 309054 497411 7.0 CHARA SPP. 201.2 24.7 1100  7 309047 497412 6.5 ELODEA CANADENS 88.1 55.8  8 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750  9 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750  1 309040 497409 3.0 CHARA SPP. 239.6 46.1 5100  2 309040 497409 3.0 CHARA SPP. 239.6 66.6  1 309040 497409 3.0 CHARA SPP. 239.6 46.1 5100  2 309040 497409 3.0 CHARA SPP. 239.6 66.6  1 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100  3 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100   |     | -  | 309047      | ! <u> </u> | O     | 1 <b>4</b> W W                                    | 0.1<br>0.5<br>0.5<br>0.1<br>66.2<br>41.4      | 0.0<br>0.4<br>0.1<br>32.3<br>33.2  | 4400                                       | 0000       |                                       | O       |
| 3 309047 497408 5.5 CHARA SPP. 1.2 0.5 4400 ELODEA CANADENS 1.8 1.3 4.3 POT RICHARDSONI 69.0 554.3 POT NARROW 32.5 25.8 4 309054 497411 7.0 CHARA SPP. 201.2 24.7 1100 6 309054 497411 7.0 CHARA SPP. 256.9 27.4 1100 7 309047 497412 6.5 ELODEA CANADENS 88.1 54.8 750 MYRIO SPICATUM 89.5 68.4 POT NARROW 89.5 68.4 POT NARROW 39.3 267.2 137.2 750 MYRIO SPICATUM 0.0 8 750 MYRIO SPICATUM 0.0 8 66.6 1 309047 497409 3.0 CHARA SPP. 213.8 49.3 5100 2 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 3 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100  |     | 2  | 309047      | ! !        | i d   |   | 2 - 2 - 3 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 | 1.1<br>0.6<br>37.9<br>86.2   | 4400                                       | 1500 P     | W W W W W W W W W W W W W W W W W W W |         |
| 4 309054 497411 7.0 CHARA SPP. 201.2 24.7 1100 5 309054 497411 7.0 CHARA SPP. 201.2 24.7 1100 6 309054 497411 7.0 CHARA SPP. 256.9 27.4 1100 7 309047 497412 6.5 ELODEA CANADENS 88.1 54.8 750 8 309047 497412 6.5 ELODEA CANADENS 89.5 68.4 8 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750 8 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750 8 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 2 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 3 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100  | '   | е  | 309047      | ! _ !      | rų.   | ₩   | 4.2<br>69.0<br>32.5                           | 0<br>- 4<br>- 3<br>- 3<br>- 3<br>- 3<br>- 3<br>- 3<br>- 3<br>- 3<br>- 3<br>- 3 | 4400                                       | 1500       | 80.<br>O                              | 0.5     |
| 5       309054 497411 7.0 CHARA SPP.       201.2       24.7 1100         6       309054 497411 7.0 CHARA SPP.       256.9       27.4 1100         7       309047 497412 6.5 ELODEA CANADENS       88.1 54.8 750         8       309047 497412 6.5 ELODEA CANADENS       267.2 137.2 750         9       309047 497412 6.5 ELODEA CANADENS       62.7 35.8 750         9       309040 497409 3.0 CHARA SPP.       213.8 46.1 5100         2       309040 497409 3.0 CHARA SPP.       213.8 46.1 5100         3       309040 497409 3.0 CHARA SPP.       213.8 46.1 5100   | , ( | 4  | 309054      |            | 7.0   |   | 40.5  | <b>8</b>   | 1100                                       | 530        | 0.1                                   | 9.0     |
| 6 309054 497411 7.0 CHARA SPP. 256.9 27.4 1100 7 309047 497412 6.5 ELUDEA CANADENS 88.1 54.8 750 8 309047 497412 6.5 ELUDEA CANADENS 267.2 137.2 750 9 309047 497412 6.5 ELUDEA CANADENS 39.3 25.8 9 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 2 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 3 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100  | •   | 2  | 309054      |            | 7.0   | . 1   | 201.2   | 24.7   | <u>-</u>                                   | 530        | 0.1                                   |         |
| 7 309047 497412 6.5 ELUDEA CANADENS 88.1 54.8 750 MYRIO. SPICATUM 30.8 21.7 POT. NARROW 89.5 68.4 8 309047 497412 6.5 ELUDEA CANADENS 267.2 137.2 750 POT. NARROW 39.3 25.8 750 MYRIO. SPICATUM 0.8 0.5 POT. NARROW 100.6 66.6 1 309040 497409 3.0 CHARA SPP. 239.6 46.1 5100 2 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 3 309040 497409 3.0 CHARA SPP. 120.0 46.4 5100  | ' ' | 9  | 309054      |            | 7.0   |   | 256.9   | 27.4   | <del>1</del> 100                           | 530        | 1,0                                   | 0.6     |
| 8 309047 497412 6.5 ELODEA CANADENS 267.2 137.2 750 9 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750 MYRIO. SPICATUM 0.8 0.5 0.5 PDT. NARROW 100.6 66.6 1 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 2 309040 497409 3.0 CHARA SPP. 120.0 46.4 5100   | '   | 7  | 309047      | <u> </u>   | ý     | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. NARROW | 88.1<br>30.8<br>89.5                          | 54.8<br>21.7<br>68.4   | 750  | 320        | 9.<br>O                               | o.<br>o |
| 9 309047 497412 6.5 ELODEA CANADENS 62.7 35.8 750 MYRIO. SPICATUM 0.8 0.5 PDT. NARROW 100.6 66.6 1 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 2 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100 3 309040 497409 3.0 CHARA SPP.  |     | 60 | 309047      | <u> </u>   | 9     | •   | 267.2<br>39.3                                 | 137.2  | 750  | 320        | 9.0                                   | 0.0     |
| 1 309040 497409 3.0 CHARA SPP. 239.6 46.1 5100<br>2 309040 497409 3.0 CHARA SPP. 213.8 49.3 5100<br>3 309040 497409 3.0 CHARA SPP. 120.0 46.4 5100   |     |    | 309047      |            | 9     | 10 P  | 62.7<br>0.8<br>100.6                          | 35.8<br>0.5<br>66.6  | 750  | 320<br>320 | 9.0                                   | o.<br>o |
| 7409 3.0 CHARA SPP. 213.8 49.3 5100  | H   |    | 309040      |            |       |   | 239.6   | 46.1   | 5100                                       | 3600       | 0.2                                   | 0.0     |
| 120.0 CHARA SPP.   | • 1 | 2  | 309040      |            |       | CHARA SPP.  | 213.8   |  | 5100                                       | 3600       | 0.2                                   | 0.0     |
| AMEK 1.4   | •   |    | 309040      |            | i (C) | CHARA SPP. VALLISNERIA AMER                       | 120.0   | 46.4   | 5100                                       | 3600       | 0.2                                   | 0.0     |

| 4                         | 4 309044 4 | 497411 | 5.3                             | ELODEA CANADENS<br>MYRIO. SPICATUM                     | 6.2   | 4.1  | 570  | 230   | 0.2   | 0.0          |
|---------------------------|------------|--------|---------------------------------|--|---|--|------|---|---|--------------|
| ស                         | 5 309044 4 | 497411 | ы.<br>С.                        | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. CRISPUS     | 23.5<br>83.7<br>0.7                         | # # # # # # # # # # # # # # # # # # #  |      | 230 mm m m m m m m m m m m m m m m m m m  | M 0 . 2 . 9 . 9 . 9 . 9 . 9 . 9 . 9 . 9 . 9 |              |
| Ø                         | 6 309044 4 | 497411 | ъ.<br>Э                         |  | 63.1<br>7.7<br>TRACE                        | 7 4 . 4 . 4 . 4 . 4 . 4 . 4 . 4 . 4 . 4  | 570  | 10 to | 0.2   |              |
| 13 1 309058 4             | 309058     | 497413 | 12.0                            | ELODEA CANADENS<br>NITELLA HYALINA<br>POT, RICHARDSONI | 20.00 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | 47.5   | 750  |   |   |              |
| ~                         | 2 309058 4 | 497413 | 12.0                            | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. RICHARDSONI | 96.8<br>235.7<br>26.1                       | 66.3<br>189.7<br>20.7  | 750  | 250   |   |              |
| e .                       | 3 309058 4 | 497413 | 12.0                            | NITELLA HYALINA<br>POT. RICHARDSONI                    | 298.8<br>34.6                               | 108.1<br>24.0  | 750  | 250   | 0.1   | 0.0          |
| 4                         | 4 309057 4 | 497413 | +<br>1.0                        | CHARA SPP.<br>Pot. Richardsoni<br>Pot. Narrow          | 2.3<br>15.3<br>11.3                         | 12.6<br>9.0  | 0000 | 150   | 0   |              |
| រ<br>រ                    | 5 309057 4 | 497413 | <del>-</del><br>0.              | POT. RICHARDSONI<br>POT. NARROW                        | 58.2<br>38.6                                | 37.7<br>29.2   | 1300 | 150   | 0   | o. 1         |
| σ                         | 6 309057 4 | 497413 | <del>-</del><br>0. <del>-</del> | RI<br>NA<br>ISN  | 25.3<br>25.3<br>2.4.3<br>2.4.3              | 10<br>20<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10 | 1300 | 150   | o.<br>-                                     | 0.1          |
| 1 309069 4                | 1 309069   | 497423 | 7.1                             | CHARA SPP.   | o.  | 4  | 650  | 430   | 2.1   | 1.6          |
| 5                         | 2 309069 4 | 497423 | 7.1                             | . ⋖  | 6.7   | 2.4  | 650  | 430   | 2.1   | 1.6          |
| C                         | 309069     | 497423 | 7.1                             | CHARA SPP.<br>Pot. Narrow                              | 34.6<br>3.6                                 | 10.3<br>1.2  | 650  | 430   | 2.1   | 9.           |
| \$5 1 309075 <sup>4</sup> | 309075     | 497427 | ອ.<br>ເ                         | POT. NARROW  | 17.7  | 12.6   | 650  | 420   | 1.9   | 1.2          |
| 7                         | 309075     | 497427 | ю<br>Ю                          |  | 70.4<br>70.6.                               | 2.2<br>89.0  | 650  | 420   | <b>6</b> 0                                  | 1.2          |
| 6                         | 3 309075   | 497427 | 3.5                             | POT. NARROW  | 16.4  | 11.5   | 650  | 420   | 6.  | 1.2          |
| 4                         | 4 309074   | 497432 | 2.2                             | Z I  | 198.1                                       | 54.4   | 620  | 400   | 5   | <b>8</b> .0  |
| In                        | 5 309074   | 497432 | 2.2                             | CHARA SPP.   | 281.9                                       | 76.2   | 620  | 400   | 1.5   | <b>89</b> .0 |
| 9                         | 6 309074   | 497432 | 2.2                             | CHARA SPP.   | 314.9                                       | 85.4   | 620  | 400   | £.5   | <b>8</b> .0  |

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND   | ISLAND | BLOCK<br>NO. |                      | EPLICATE LORA NO. COORDIN | RAN<br>INATES<br>LOWER | DEPTH<br>(FT.) | MACROPHYTE TAXON   | DRY WEIGHT (G/M2)       | ASH-FREE L<br>WEIGHT<br>(G/M2)   | LIGHT (FOOT<br>SERMESSE<br>SURFACE | CANDLES)   | CURRENT (FT                            | ./SEC.)<br>==================================== |
|----------------|--------|--------------|----------------------|---------------------------|------------------------|----------------|--|-------------------------|--|------------------------------------|------------|--|---|
| ST. CLAIR FAWN | FAWN   | -            |                      | 1 309569                  | 498249                 | 11.5           | NITELLA HYALINA<br>Pot. Narrow   | 31.5                    | 20.4<br>4.02   | 1800                               | 650        | 2.3                                    | 1.7   |
|                |        |              | 8                    | 309569                    | 498249                 | 1.3            |  | 2.3<br>69.2             | 0.6<br>51.7  | 1800                               | 650        | 2.3                                    | 1.7   |
|                |        |              | က                    | 309569                    | 498249                 | 11.5           | POT. NARROW  | 76.3                    | 57.7   | 1800                               | 650        | 2.3                                    | 1.7   |
|                |        | 7            | )<br>                | 1 309572                  | 498258                 | eo<br>4.       | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW          | 0 <del>1</del><br>0 – e | 27.7<br>33.5<br>0.5  | 4 100                              | 4 10       | 6.                                     | 4.0   |
|                |        |              | 7                    | 309572                    | 4982                   | 80<br>4.       | NITELLA HYALINA<br>POT. GRAMINEUS  | 3.8<br>46.0             | † . <del>†</del><br>37 . 6   | 4 100                              | 4 10       | 9                                      | 4.0   |
|                |        | 1            | ო                    | 3 309572                  | 4982                   | <b>6</b> 0     | CHARA SPP.<br>Pot. Gramineus   | 13.8                    | 4.4  | 4 100                              | 4 10       | 9.                                     | 4.0   |
|                |        | င            | 309582               | 1 309582                  | 498256                 | . 2<br>. 2     | MYRIO. EXALBESC<br>NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. RICHARDSONI | TRACE<br>44.0<br>66.8   | 7.8.<br>7.3.1  | 2600                               | 520        | 9.0                                    | 2.7   |
|                |        |              | 8                    | 309582                    | 498256                 | 8.2            |  | 54.2<br>45.8            | 20.5<br>35.7   | 2600                               | 520        | 9.0<br>0.0                             | 7.  |
|                |        | 1            | e                    | 309582                    | 498256                 | 8<br>.2        | NITELLA HYALINA<br>Pot. Gramineus  | 51.4<br>24.2            | 19.5<br>6.0  | 2600                               | 520        | 3.0                                    | 2.7   |
|                |        | !<br>}       | -                    |                           | 498263                 | မ.<br>က        | CHARA SPP. POT. GRAMINEUS POT. ZOSTERIFORM POT. NARROW ZANN. PALUSTRIS   | ~                       | 0 + 6<br>0 0 0<br>0 0 0 0<br>0 0 0 0 0<br>0 0 0 0 0<br>0 | 4300                               | 3500       | ÷                                      | 1.2   |
|                |        |              | 6                    | 309579                    | 498263                 | ь<br>ъ         |  | 172.4<br>1.0<br>75.9    | 39.98<br>39.89   | 4300                               | 3500       | 9.                                     | 4.  |
|                |        | 1            |                      | 3 309579                  | 498263                 | 9. St          | CHARA SPP.<br>Pot. Narrow  | 590.7<br>114.2          | 72.0<br>114.0  | 4300                               | 3500       | 9.                                     | 1.2   |
|                |        | rc<br>Q      | •                    | 1 309602                  | 498270                 | 3.7            | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS                           | 118.4<br>0.4<br>21.0    | 29.7<br>0.2<br>14.7  | 1500                               | 000<br>000 | <del>-</del><br>4                      | 1.0   |
|                |        |              | 6                    | 309602                    | 498270                 | 7.6            | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS                           | 81.4<br>0.6<br>23.1     | 25.1<br>0.3<br>16.4  | 1500                               | 000<br>0   | 4.4                                    | <del>1</del> .0                                 |
|                |        |              | #<br>#<br>#<br># (7) | 3 309602 v                | 498270                 | 3.7            | CHARA SPP.   | 77.4                    | 15.4   | 1500                               | 1000       | ************************************** | 1.0   |

|   |                 |               | 1        | NAJAS FLEXILIS<br>POT. GRAMINEUS                                | 0.5<br>4.6  | 3.0                          |                  |      |                    | 1           |
|---|-----------------|---------------|----------|---|---|------------------------------|------------------|------|--------------------|-------------|
| <br>                                    | 9593            | 498265        | 4.6      |   | 176.8<br>1.3<br>27.9  | 56.9<br>1.0<br>22.1          | 2500             |      |                    | o.          |
| 7                                       | 309593 49       | 498265        | ω<br>4.  | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. NARROW                     | 261.7<br>0.6<br>36.3  | 74.8<br>0.3<br>29.4          | 2500             | 1300 |                    | 0.4         |
| е                                       | 3 309593 49     | 498265        | 6.<br>4. | CHARA SPP.<br>POT. ZOSTERIFORM<br>POT. NARROW                   | 170.7<br>0.3  | 6.7<br>6.7<br>6.7            | 2500             |      | N (7)              |             |
|   | 309584 49       | 498270        | 2.88     | <b>। ≪</b>  | 21.3<br>109.5<br>0.3  | 8.6<br>72.7<br>0.2           | 3200             | 9000 |                    | . O         |
| N                                       | 2 309584 49     | 498270        | 2 .<br>8 | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW | 141.7<br>14.0<br>10.5<br>0.5  | 33.8<br>10.3<br>1.5          | 3200             | 1900 | 9.0                | e.<br>O     |
| e                                       | 3 309584 49     | 498270        | 23<br>38 | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW | 88.4<br>16.8<br>47.5<br>27.1  | 16.7<br>11.8<br>31.7<br>20.2 | 3200             | 1900 | <b>9</b><br>O      | e.          |
| 4                                       | 4 309585 48     |               | 3.0      | CHARA SPP.  | 87.1  | 22.3                         | 4600             |      | <b>9</b> .0        | 0.8         |
|   |                 | 498267        | 3.0      | CHARA SPP. POT. GRAMINEUS                                       | 24. 1   | 7.5<br>3.7                   |                  |      | H 60.              | 80.0        |
| <b>o</b>                                | 3095            | 498267        | 3.0      | CHARA SPP.<br>POT. GRAMINEUS                                    | 92.5<br>3.0   | 26.4<br>1.9                  | 4600             | 2700 | <b>80</b> . O      | <b>8</b> .0 |
| -                                       | 309508 48       | 498273        | 4        | RA SPP.<br>GRAMINE<br>NARROW                                    |   | 88<br>6.12<br>6.13           | 1000             | 350  |                    | 1           |
| 7                                       | 2 309608 45     | 498273        | 4        |   | 3.2<br>112.0<br>0.3   | 0.08<br>8.00<br>2.03         | <del>1</del> 000 | 350  | 0.0                |             |
|   | 309608 49       | 498273        | 4        | SPP.<br>GRAMINE<br>SNERIA                                       | 0.3<br>86.6<br>1.1  | 0.1<br>63.7<br>0.8           | 1000             | 350  | o.<br><del>-</del> | 0.7         |
| -                                       | 309603 4982     | 498277        | 2.0      | A   | - 00°<br>- 00° | 0.7<br>7.0<br>5.6            | 3500             | 3500 | <b>y</b>           | o<br>.s     |
| 2 | 2 309603 46     | 309603 498277 | 2.0      | CHARA SPP. POT. RICHARDSONI                                     | 5.0<br>91.2   | 0.9<br>72.3                  | 3500             | 3500 | 9.0                | 0.5         |
|   | 3 309603 498277 | 498277        | 2.0      | CHARA SPP.<br>POT. RICHARDSONI<br>POT. NARROW                   | 37.2<br>68.6<br>13.9  | 28.3<br>56.4                 | 3500             | 3500 | o.6                | 1           |

|          | 4 | 4 309601 48    | 309601 498273 | 2.5        | CHARA SPP                               | SPP.  | 108.3                   | 36.5                      | 3300 | 1700 | <b>8</b> .0                              | 0.7            |
|----------|---|----------------|---------------|------------|---|---|-------------------------|---------------------------|------|------|--|----------------|
|          | ស | 5 309601 49    |               | 2.5        | CHARA SPP<br>Pot. GRAM                  | SPP.  | 40.5                    | 12.3                      | 3300 | 1700 | # 69 · · · · · · · · · · · · · · · · · · | . O . J        |
|          | 9 | 6 309601 48    | 309601 498273 | 2.5        | CHARA                                   | CHARA SPP.  | 136.0                   | 42.9                      | 3300 | 1700 | 8.0                                      | 0.7            |
| <b>ō</b> | - | 309620         | 309620 498283 | ت<br>0     | CHARA<br>NAJAS<br>POT. N                | CHARA SPP. NAJAS FLEXILIS POT. NARROW                                     | 144.0<br>0.1<br>TRACE   | 38.4                      | 2500 |      | M M M M M M M M M M M M M M M M M M M    | 7.0            |
|          | 2 | 2 309620 48    | 309620 498283 | 0.0        | CHARA                                   | SPP.  |                         | 27.0<br>0.5               | 2500 |      | 8.0                                      | 0.7            |
| ;        | က | 3 309620 46    | 309620 498283 | 0.0<br>0.0 | CHARA                                   | SPP.  | 77.4                    | 20.4                      | 2500 | 040  | 0.8                                      | 0.7            |
| -<br>-   |   | 11 1 309620 49 | 309620 498284 | 9.0<br>8   | CHARA SPP<br>POT. ZOSTI<br>POT. NARR    | SPP.<br>ZOSTERIFORM<br>NARROW   | 533.3<br>153.5          | 177.8<br>109.7<br>0.7     | 1500 |      |  | 0.1            |
|          | 8 | 2 309620 48    | 309620 498284 | 9.0<br>0.0 | CHARA<br>NAUAS<br>POT.<br>POT.<br>SAGIT | CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI SAGITTARIA SPP. | TRACE<br>555.1<br>34.9  | 25.0<br>9.0<br>0.0<br>0.0 | 1500 | 230  | Ø.                                       | 0. 0           |
|          | ၈ | 3 309620 48    | 498284        | 3.0        | CHARA<br>POT.<br>POT.                   | NAN   | 622.8<br>160.8<br>37.9  | 201.4<br>118.9<br>28.6    | 1500 | 230  | O .s                                     | <b>~</b><br>.0 |
|          | 4 | 4 309616 49    |               | 2.5        | CHARA SE                                | SPP.<br>FLEXILIS  | 129.3<br>0.1            | 39.5<br>0.1               | 2400 | 1400 | 9.0                                      | 0.7            |
|          | ហ | 5 309616 49    | 498280        | 2.5        | CHARA SPP<br>Pot. GRAM                  | CHARA SPP.<br>Pot. Gramineus  | 58.2<br>13.0            | 18.3<br>2.5               | 2400 | 1400 | 9.0                                      | 0.7            |
|          | 9 | 309616         | 309616 498280 | 2.5        | CHARA<br>NAJAS<br>POT.                  | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. NARROW                               | 106.0<br>TRACE<br>TRACE | 35. 4                     | 2400 | 1400 | # 9 · O                                  | 0.7            |

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA 2. TRACE = LESS THAN 0.001 G/M2

| RIVER             | ISLAND  | BLOCK<br>NO. | REPLICATE LOR<br>NO. COORDI | COORDIN  | < Z 1          | DEPTH<br>(FT.)  | MACI                                | MACROPHYTE<br>TAXON                              | DRY WEIGHT<br>(G/M2)        | ASH-FREE L<br>WEIGHT<br>(G/M2)         |               |          | CURRENT (F | r./SEC.)   |
|-------------------|---------|--------------|-----------------------------|----------|----------------|-----------------|-------------------------------------|--|-----------------------------|--|---------------|----------|------------|------------|
| ST. CLAIR RUSSELL | RUSSELL |              |                             | 309944   | 498652         | 10.5            | POT. NAR                            | NARROW<br>LOP. OBTUSA                            | 32.4<br>TRACE               | 25.5                                   | 750           | 200      | 2.3        | . 5<br>. 5 |
|                   |         |              | 7                           | 309944   | 498652         | 10.5            |                                     | NARROW<br>LOP. OBTUSA                            | 45.6<br>TRACE               | 36.7                                   | 750           | 200      | 2.3        | # LO       |
|                   |         |              | 6                           | 309944   | , ` ;          | f0.5            | :                                   | RICHARDSONI<br>Narrow                            | 20.6<br>32.8                | 15.5<br>25.9                           | 750           | 200      | 2.3        | i io       |
|                   |         |              | 4                           | 309948   | 498654         | <b>o</b> .      | P01<br>                             | GRAMINEUS<br>Narrow                              | 78.4                        | 8.0°.                                  | 2500          | 1000     | H          | 0.7        |
|                   |         |              |                             | 309948   | 498654         | <b>eo</b><br>O  |                                     | GRAMINEUS<br>Narrow                              | 109.5<br>19.5               | 84.4<br>15.1                           | 2500          | 1000     | 1.5        | 0.7        |
|                   |         |              |                             | 309948   | 498654         | о<br>о          | NITEL<br>POT.<br>POT.               | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. NARROW | 0.5<br>221.2<br>28.5        | 0.1<br>132.4<br>21.0                   | 2500          | 1000     | ٠.<br>د.   | ٥.٦        |
|                   |         | 2            | -                           | 1 309939 | 498653         | ເດ<br>ເດ        | CHARA<br>POT.<br>POT.               | SPP.<br>Gramineus<br>Narrow                      | 1RACE<br>96.0<br>9.9        | 70.2<br>7.5                            | 650           | 240      | 2.3        | o. 3       |
|                   |         |              | 7                           | 309939   | 498653         |                 |                                     | GRAMINEUS<br>Narrow                              | 118.5<br>29.3               | 89.6<br>23.3                           | 650           | 240      | 2.3        | 0.3        |
|                   |         |              | 0                           | 3 308939 | 498653         | 10.<br>10.      | POT. GRAM<br>POT. NARR<br>NITELLOP. | GRAMINEUS<br>NARROW<br>LOP, OBTUSA               | 90.6<br>37.5<br>TRACE       | 72.3<br>30.7                           | 650           | 240      | 2          | o . o      |
|                   |         | 6            |                             | 1 309968 | 498660         | <b>8</b> .0     |                                     | EA CANADENS<br>RICHARDSONI                       | 3,5<br>167.4                | 2.4                                    | 4000          | 89<br>52 | 0.5        | 0.1        |
|                   |         |              | 2                           | 2 309968 | 498660         | <b>60</b>       | ELODEA<br>POT. R                    | EA CANADENS<br>RICHARDSONI                       | 23.1<br>944.8               | 15.3<br>886.8                          | 4<br>000<br>0 | 85<br>52 | o.s        | 0.1        |
|                   |         |              | е                           | 309968   | 498660         | <b>80</b><br>O. |                                     | EA CANADENS<br>RICHARDSONI                       | 0.2<br>651.0                | 0.1<br>583.3                           | 4000          | න<br>ග   | o.5        | o<br>-     |
|                   |         | 4            | 4 1 309962                  | 309962   | 498658         | <b>6</b> 0      | 140                                 | SPP. A CANADENS RICHARDSONI                      | 8.4<br>5.1<br>118.7<br>29.7 | 4.1<br>3.3<br>91.2<br>22.7             | 3300          | 140      | <b>9</b>   |            |
|                   |         |              | 7                           | 309962   | 408658<br>8658 | <b>6</b> 0      | CHARA ELODEA MYRIO POT N            | SPP.<br>CANAD<br>SPICA<br>ICHARD                 | 10.7<br>7.7<br>0.4<br>158.2 | 4.9<br>4.9<br>4.9<br>4.1<br>4.1<br>4.1 | 3300          |          | 9·<br>•    | 0.2        |
|                   |         |              |                             | 3 309962 | 498658         | <b>8</b><br>0.  | ELODEA<br>POT. R                    | A CANADENS<br>RICHARDSONI                        | 38.3<br>78.3                | 26.9<br>64.0                           | 3300          | 140      | 9.0        | 0.2        |

| ##<br>##<br>##<br>##<br>## | H<br>H<br>H<br>H<br>H                 | 11<br>11<br>11<br>11 | H<br>H<br>H<br>11<br>12<br>13<br>14<br>14 | 11<br>H<br>H<br>U | POT                    | NARROW   | 2.5                           | Q. 1                         | #<br>#<br>#<br>#<br># |           |                    |                 |
|----------------------------|---------------------------------------|----------------------|---|-------------------|------------------------|--|-------------------------------|------------------------------|-----------------------|-----------|--------------------|-----------------|
|                            | - !                                   | 309951               | 498657                                    |                   | P01.                   | RICHARDSONI<br>NARROW  | 95.1<br>10.8                  | 76.2<br>8.8                  | 550                   | 230       | ب<br>ن             | 0.2             |
|                            | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 2 309951 49          | 498657                                    | 60                | CHAR/<br>POT.<br>POT.  | CHARA SPP.<br>Pot. Richardsoni<br>Pot. Narrow                        | TRACE<br>54.4<br>40.4         | 43.5<br>32.9                 | 980                   | 730       | n -                | 0.2             |
|                            |                                       | 309951 49            | 498657                                    | ©<br>:            | NITEL<br>POT.          | LA HYAL<br>RICHARD<br>NARROW   | 1.5<br>139.4<br>22.6          | 0.5<br>94.5<br>17.1          | 550                   | 230       | ÷.                 | 0.2             |
|                            | -                                     | 309945 49            | 498861                                    | o. 9              |                        | A SPP.<br>Gramineus<br>Narrow  | 186.3<br>0.6<br>1.5           | 132.0<br>0.4<br>1.2          | -<br>100              | 560       |                    |                 |
|                            |                                       | 309945 49            | 498861                                    | φ<br>•            | CHARA                  | A SPP.   | 180.3                         | 34.8                         | <u>~</u>              | 560       | 6                  | 1.2             |
|                            | е                                     |                      | 309945 498861                             | 0 · 9             |                        | A SPP.<br>GRAMINEUS<br>NARROW  | 97.7<br>TRACE<br>TRACE        | 57.9                         | -<br>00<br>-          | 560       | o.<br>-            | <del>1</del> .2 |
|                            | 4                                     | 309945 49            | 309945 498C58                             | ر.<br>0.          | CHARA<br>POT.          | A SPP.<br>GRAMINEUS  | 17.7                          | 6.1                          | 3600                  | 2200      | 2.3 m              | # C             |
|                            | ស                                     | 309945 49            | 498658                                    | ιυ<br>Ο           | CHARA<br>POT.          | A SPP.<br>GRAMINEUS<br>NARROW  | 2.1<br>134.9<br>7.8           | 0.6<br>106.7<br>6.6          | 3600                  | 2200      | 2.3                | ÷.3             |
|                            | ,                                     | 6 309945 49          | 498658                                    | رة<br>0.          | CHARA<br>NITEL<br>POT. | CHARA SPP.<br>Nitella Hyalina<br>Pot. Gramineus                      | TRACE<br>9.7<br>54.4          | 3. 2.<br>3. 3. 38<br>3. 38   | 3600                  | 2200      | 2 · 3              | e               |
| 7                          | -                                     |                      | 309972 498664                             | o.<br>9           | NITE<br>POT.<br>POT.   | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW | 13.7<br>111.4<br>67.1<br>19.2 | 6.4.8<br>6.4.9<br>6.5.0      | 3500                  | 1800      | <del>.</del><br>4. | <b>9</b><br>O   |
|                            | 2                                     | 309972 49            | 498664                                    | 9<br>9            | P01 .                  | RICHARDSONI  | 599.5                         | 259.9                        | 3500                  | 1800      | 4.4                | o.6             |
|                            | ၈                                     | 309972               | 498664                                    | o. <b>9</b>       | NITEL<br>POT.<br>POT.  | NITELLA HYALINA<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW | 5.3<br>122.9<br>50.8<br>3.7   | 93.0<br>- 60.3<br>8.0<br>8.2 | 3500                  | 1800      | 4.                 | <b>9</b> .0     |
|                            | 4                                     | 4 309972 49866       | 498664                                    | 9.0               | CHARA                  | A SPP.   | 158.2                         | 48.7                         | 1300                  | 1000      |                    | 0.7             |
|                            | ις.                                   | 309972               | 498664                                    | 9.0               | CHARA                  |  | 148.5                         | 52.2                         | 1300                  | 1000      | <b>.</b> +         | 0.7             |
|                            | 9                                     | 6 309972 49          | 498664                                    | о<br>О            | CHARA                  | SPP.   | 118.7                         | 38.4                         | -<br>006<br>006       | 0001      |                    | 0.7             |
| <b>6</b> 0                 | -                                     | 309963               | 498665                                    | 4.<br>Ri          | POT.<br>ZANN.          | GRAMINEUS<br>NARROW<br>. PALUSTRIS                                   | 77.5<br>62.3<br>1.0           | 57.4<br>50.0<br>8.0          | 2800                  | 1000<br>1 | <del>.</del><br>6. | 0.2             |
|                            | 7                                     | 2 309963 49          | 498665                                    | ٠.<br>ت           | P0T                    | GRAMINEUS<br>NARROW  | 133.2<br>148.3                | 96.7<br>118.5                | 2800                  | 1000      | 9.                 | 0.2             |
|                            | K (5)                                 | 3 309963 49:         | 309963 498665                             | 4<br>.5           | POT.                   | GRAMINEUS  | 47.4                          | 35.4                         | 2800                  | 1000      | 1.6                | 0.2             |

|                    |                                    |  | -  |
|--------------------|------------------------------------|--|--|
| #<br>#<br>#        | 0.                                 | 0.1  | 0.   |
|                    | 45.5 520 150 0.7 0.1 68.3 16.5 1.8 | 0.7  | 0.7  |
|                    | 150                                | 150  | 150  |
|                    | 520                                | 520  | 520  |
| 53.1               | 8.0<br>8.0<br>8.0<br>8.0<br>8.0    | 140.3<br>0.4<br>81.1<br>15.7   | 8.7.2<br>1.7.1<br>1.7.1  |
| 64.8 53.1<br>TRACE | 162.1<br>97.7<br>21.6<br>3.0       |  | 275.4<br>0.08<br>79.0<br>21.2<br>1.2   |
|                    |                                    | 498665 4.0 CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI | 498665 4.0 CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI POT. NARROW |
|                    | <b>4</b><br>O                      | o.   | 0.   |
| •                  | 498665                             | 498665   | 498665   |
|                    |                                    | <b>*</b>   | 3 309956   |
|                    | 309956                             | 0  |  |

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE \* LESS THAN 0.001 G/M2

| RIVER ISLAND BLOCK RE<br>NO. | ISLAND | BLOCK<br>NO. | REPLICATE<br>NO. | PLICATE LOR/<br>NO. COORDIN<br>UPPER | RAN<br>JINATES<br>LOWER | 0EPTH<br>(FT.) |   | MACROPHYTE<br>TAXON  | DRY WEIGHT (G/M2)                             | ASH-FREE L<br>WEIGHT<br>(G/M2) | LIGHT (FOOT<br>SURFACE | r CANDLES)  | CURRENT(FT  | T./SEC.)<br>BOTTOM      |
|------------------------------|--------|--------------|------------------|--------------------------------------|-------------------------|----------------|---|--|---|--------------------------------|------------------------|-------------|-------------|-------------------------|
| DETROIT                      | BELLE  | -            | -                | 1 312758                             | 10 1                    | 10.5           | P01.  | RICHARDSONI  | 186.6   | 118.8                          | 3500                   | 290         | -           | 0.3                     |
|                              |        |              | 7                | 312758                               | י ער י                  | ED.            | POT.  <br>VALLI                                 | POT. RICHARDSONI<br>VALLISNERIA AMER                                     | 78.1<br>1.9                                   | 62.2<br>1.2                    |                        | 290         |             | 0.3                     |
|                              |        |              | 0                | 3 312758                             | 500952                  | 10.5           | P0T.  | POT. RICHARDSONI   | 193.4   | 141.3                          | 3500                   | 290         | 7.1         | 0.3                     |
|                              |        |              | ∢                | 312760                               |                         | 0              | NAJAS FLI<br>POT. GRAI<br>VALLISNEI<br>NITELLOP | NAJAS FLEXILIS<br>POT. GRAMINEUS<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | 2.3<br>7.8<br>1.1                             |                                | 3600                   | 8           | 6.<br>O     | 0.7                     |
|                              |        |              | ស                | 5 312760                             | 500953                  | o,             | CHARA SP<br>NAJAS FL<br>POT. RICI<br>VALLISNE   | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. RICHARDSONI<br>VALLISNERIA AMER     | 0.00<br>0.00<br>27.7                          | 0.2<br>7.5<br>7.6              | 3600                   | 700         | . O         | 0.7                     |
|                              |        |              | φ                | 312760                               | 500953                  | o.             | CHARA<br>NAJAS<br>POT.                          | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER     | 2.0<br>4.0<br>2.0<br>2.0<br>2.0               | 0.0<br>1.7<br>7.7              | 3600                   | <b>0</b> 07 | <b>6</b> .0 | 0.7                     |
| ٠                            |        | 7            | 2 1              | 312769                               | 500961                  | 7.5            | POT.<br>VALLI                                   | POT. CRISPUS<br>VALLISNERIA AMER   | 0.2<br>47.2                                   | 0.2<br>25.1                    | 3300                   | 470         | . O         | 0 . 4                   |
|                              | ·      |              | 8                | 2 312769                             | 500961                  | 7.5            | CHARA<br>POT. C<br>VALLIS                       | CHARA SPP.<br>POT. CRISPUS<br>VALLISNERIA AMER                           | TRACE<br>5.8<br>70.6                          | 10.4<br>4.0                    | 3300                   | 470         | e. o        | 0.0                     |
|                              | ÷      |              | 6                | 312769                               | 500861                  | 7 . 5          | POT.<br>POT.<br>VALLI<br>NITEL                  | POT. ZOSTERIFORM<br>POT. NARROW<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA  | 2 2 3 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 2 - 4<br>- 3 - 6<br>- 6 - 6    | 3300                   | 410         | e.<br>O     | 0.1                     |
| ٠                            |        | 6            |                  | 312781                               | ולמוו                   | o.             | POT.  | POT. RICHARDSONI   | 325.9   | 216.6                          | 3400                   | 005<br>2006 | 0.2         |                         |
|                              |        |              | 7                | 2 312781                             | 500969                  | <b>6</b> 0     |   | CRISPUS<br>RICHARDSONI   | 6.2<br>186.5                                  | 130.0                          | 3400                   | 200         | 0.2         | 0.1                     |
|                              |        |              |                  | 312781                               | 500969                  | 0.6            | POT.  | RICHARDSONI  | 122.5   | 9.06                           | 3400                   | 8<br>8      | 0.2         | <b>0</b> . <del>1</del> |
|                              |        | •            | -                | 312788                               | 500972                  | 0.0<br>0       | CHARA<br>NAJAS<br>POT.<br>POT.<br>POT.<br>VALLI | SPI<br>SNE   | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0     |                                | 3600                   | 099         | e .         | پ<br>٥                  |
|                              |        |              | 7                | 2 312788                             | 500972                  | 0.0            | CHARA SPP. NAJAS FLEX VALLISNERI                | SPP.<br>FLEXILIS<br>SNERIA AMER  | 0.7<br>0.4<br>27.3                            | 0.2<br>0.2<br>19.2             | 3600                   | 660         | F           | 9 · 0                   |

| 1<br>1<br>1 | en 1     | 3 312788     | 312788 500972 | 10.0        | CHARA SPP. NAJAS FLEXILIS POT. ZOSTERIFORM VALLISNERIA AMER                                    | 0.7<br>0.8<br>0.5<br>0.5                   | 00.00<br>00.00<br>00.00<br>00.00 | 3600 | 099 | e.  | 9.0      |
|-------------|----------|--------------|---------------|-------------|--|--|----------------------------------|------|-----|-----|----------|
| ທ           | — M      | 1 312803     | 500982        | 0.9         | POT. CRISPUS<br>POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER                       | 17.0<br>72.4<br>1.6<br>8:0                 | 9.3<br>42.8<br>1.0<br>14.6       | 3700 | 500 | 0.7 | # O      |
|             | 7        | 2 312803     | 500982        | <b>6</b> .0 |  | 175.6                                      | 123.1                            | 3700 | 200 | 0.7 | 0.1      |
|             | е .      | 312803       | ရှိ           | o.<br>9     | POT. RICHARDSONI<br>VALLISNERIA AMER   | 129.6                                      | 82.2                             | 3700 | 200 | 0.7 | 0. 4     |
|             |          | 4 312803 5   | 500981        | 7.0         | POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER                                       | 2 . 90 H H H H H H H H H H H H H H H H H H | 6.0<br>8.0<br>96.2               | 3700 | 200 | 0.7 | 0.1      |
|             | e<br>v   | 312803       | 500981        | 7.0         | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. RICHARDSONI<br>VALLISNERIA AMER                           | 68<br>5.2<br>5.2<br>3.2                    | 0.5<br>0.4<br>3.6<br>52.3        | 3700 | 200 | 0.7 | 0.1      |
|             | υ        | 312803       | Q I           | 7.0         | POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                   | 4.4.00.00                                  | 10.2<br>15.8<br>15.8             | 3700 | 200 | 0.7 | 0.       |
| φ           | -        | 6 1 312816 5 | HQ 1          | O.          | CHARA SPP.<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA   | 39.0                                       | 6.0<br>0.0                       | 3600 | 260 | 0   | . O      |
|             | 7        | 2 312816 5   | O I           | O. 00       | CHARA SPP.   | 29.6<br>3.9                                | 4.5<br>2.8                       | 3600 | 260 | 1.0 | 0.0      |
|             | <b>г</b> | 3 312816 5   | 500989        | o.          | CHARA SPP. NAJAS FLEXILIS POT. NARROW VALLISNERIA AMER   | 0.7<br>8,1<br>1.7                          | 4.0                              | 3600 | 260 |     | # 60 · 0 |
| ۲           | -        | 312856 5     | 200896        | O<br>60     | MYRIG SPICATUM<br>POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | 425.4<br>67.6<br>7.1<br>11.4<br>2.8        | 99.2<br>4.00.2<br>6.00<br>6.7    | 4700 | 380 |     |          |
|             |          | 312856 5     | 500996        | O<br>6      | MYRIO, SPICATUM<br>POT, CRISPUS<br>POT, ZOSTERIFORM<br>VALLISMERIA AMER                        | 151.1<br>29.8<br>3.9                       | 112.5<br>23.0<br>2.8<br>3.2      | 4700 | 380 | 0.2 | 0.0      |
|             | е        | 3 312856 5   | 500996        | O<br>6      | MYRIO. SPICATUM<br>PDT. ZOSTERIFORM<br>VALLISNERIA AMER  | 207.3<br>6.4<br>10.4                       | 146.0<br>3.4<br>6.4              | 4700 | 380 | 2   |          |
|             | 4        | 312857       | 500997        | 7.0         | MYRIO. SPICATUM<br>NAJAS FLEXILIS<br>POT. RICHARDSONI<br>VALLISNERIA AMER                      | 9.5<br>1.2<br>7.8<br>7.0                   | 8.1<br>0.7<br>6.0<br>4.6         | 4600 | 066 | 0.2 | . O      |

|      | 61<br>64<br>64<br>64<br>64 |   |               | ***     |   | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>; |   |  |       |              |                |
|------|----------------------------|---|---------------|---------|---|---|---|--|-------|--------------|----------------|
|      |                            | 312857  | 500997        | 7.0     | POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER                                | ი ഗ ც<br>4 ლ დ                                      | 2   | 4600   | 390   | 0.2          | 0.1            |
|      | <b>o</b>                   | 312857 50                                     | 500997        | 7.0     | 1 <b>L</b> I R + 1  | 35.4<br>0.1<br>36.6                                 | 2.0<br>41.3<br>0.0<br>15.8                | 4600   |       |              | 0.1            |
| 80   |                            | 312846 50                                     | 500993        | ю<br>О  | * ~ - 1   | 2.3<br>0.9<br>7.                                    | 1,9<br>0.6<br>37.0                        | 3200   | 1400  | 0.           | o. o           |
|      | 2                          | 2 312846 500                                  | 500993        | ر.<br>0 | NAJAS FLEXILIS<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                                  | 0.4<br>12.3<br>283.0                                | 0.9<br>6.9<br>6.0                         | 3200   | 1400  |              | o.<br>0        |
| <br> | 6                          | 312846 50                                     | 500993        | ъ<br>О  | SPP.<br>SPI<br>ZOSTE<br>SNERI<br>LOP.   | 162.5<br>1.5<br>11.1<br>0.4                         |   | 3200   | 400   | <del>.</del> | o.<br>o        |
|      |                            | 312834  | 500983        | 6.5     |   | 372.8   | 128.0                                     | 3600   | 1400  | 0.4          | <del>-</del> 0 |
|      | 2                          | 2 312834 50                                   |               | . S     | . (   | 526.4   |   | 3600   | 1400  | 0.4          | -<br>0         |
|      | 6                          | 312834 50099                                  | 500993        | 4<br>10 | SPP.  | 465.7   | 145.7                                     | 3600   | 1400  | 0.1          | <del>.</del> 0 |
|      | *                          | 4 312836 50                                   | 312836 500997 | ဝ<br>ဖ  | O. SPICA<br>NARROW<br>ISNERIA<br>LLOP. OB   | 24.3<br>7.1<br>19.2<br>26.9                         | 16.2<br>12.5<br>10.5                      | 3400   | 820   | 4.0          | 0.2            |
|      | <b>)</b>                   | 312836 50099                                  | 500997        | 0.<br>9 | NAJAS FLEXILIS<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA              | TRACE<br>2.6<br>28.9<br>6.9                         | 0.6<br>19.5<br>2.9                        | 3400   | 820   | 4.0          | 0.2            |
|      | •                          | * 60  | 500997        | O.      | CHARA SPP. MYRIO. EXALBESC POT. ZOSTERIFORM VALLISNERIA AMER NITELLOP. OBTUSA           | - 6.0<br>6.0<br>6.0<br>6.0<br>6.0                   | 20.0<br>2.4.0<br>6.0<br>6.0               | 3400   | 8 20  | 4.           | 0.5            |
|      | -                          | 312822 50099                                  | 500991        | 4<br>0  | CHARA SPP. NAJAS FLEXILIS POT. CRISPUS POT. GRAMINEUS POT. ZOSTERIFORM VALLISNERIA AMER | 66.2<br>22.2<br>90.3<br>9.5<br>9.5<br>9.5           | 22.9<br>3.22<br>85.6<br>7.4<br>7.4<br>8.4 | 900<br>900<br>900<br>900<br>900<br>900<br>900<br>900<br>900<br>900 | 2 100 | 0            | <del>-</del>   |
|      | H<br>H<br>H<br>H           | 312822 500 mm m m m m m m m m m m m m m m m m | 500991        | 0.      | NAJAS FLEXILIS<br>NAJAS FLEXILIS<br>POT. GRAMINEUS<br>NITELLOP. OBTUSA                  | 5.0<br>110.8<br>4.7<br>29.8                         | 3.0<br>62.9<br>3.2<br>10.5                | 3000   | 2 100 |              |                |

0.1 0.3 2100 3000 6.6 6.1.4 6.1.6 6. 46.8 1.8 2.4.8 2.25.5 7.8 43.0 CHARA SPP.
NAJAS FLEXILIS
POT. CRISPUS
POT. GRAMINEUS
POT. RICHARDSONI
POT. NARROW
VALLISNERIA AMER
NITELLOP. OBTUSA 312822 500991 4.0

6

(

1-43

NOTE: 1. (-) INDICATES MISSING DATA 2. TRACE = LESS THAN 0.001 G/M2

| RIVER   | RIVER ISLAND BLOCK REPLICATE LOR NO. NO. COORDI UPPER | BLOCK<br>NO. | REPLICATE<br>NO. | COORDI<br>UPPER | AN<br>NATES<br>LOWER | DEPTH<br>(FT.) | K<br>H                   | MACROPHYTE<br>TAXON                                 | DRY WEIGHT (G/M2)     | ASH-FREE L<br>WEIGHT<br>(G/M2)         | LIGHT (FOOT | CANDLES) BOTTOM                           | CURRENT(F' | r./SEC.) |
|---------|---|--------------|------------------|-----------------|----------------------|----------------|--------------------------|---|-----------------------|--|-------------|---|------------|----------|
| DETROIT | HENNEP IN   | -            | - 1              | 1 314067        | . 500669             | 8.             | POT.                     | POT. NARROW<br>VALLISNERIA AMER                     | 45.1                  | 33.8                                   | 1800        | <u>4</u><br>ال                            | 0.1        | 0.0      |
|         |   |              | 8                | 314067          | NO I                 | 8.             | POT.                     | POT. NARROW<br>VALLISNERIA AMER                     | 50.9<br>25.7          | 39.1<br>12.3                           | 1800        | 45  | 0.1        | 0.0      |
|         |   |              | 6                | 314067          | , i                  | 4<br>80        | POT.<br>VALLI            | POT, NARROW<br>VALLISNERIA AMER                     | 27.4                  | 13.5                                   | 1800        | # 4.                                      |            | 0.0      |
|         |   | 7            | -                | 314062          | 500676               | 4.             | P07<br>                  | RICHARDSONI<br>NARROW                               | 116.4                 | 85.1<br>21.9                           | 1700        |   | 0.1        | 0.0      |
|         |   |              | 7                | 314062          | 500676               | 4<br>2.        |                          | RICHARDSONI<br>NARROW                               | 209.6<br>20.8         | 150.8                                  | 1700        |   | 0. 1       | 0.0      |
|         |   |              | က                | 314062          | 500676               | 4.2            | P01<br>                  | RICHARDSONI<br>Narrow                               | 363.4<br>655.0        | 220.3                                  | 1700        | 9   | 0. 1       | 0.0      |
|         |   |              | 4                | 1 1             | 2006                 | ro<br>ro       | P01                      | RICHARDSONI<br>NARROW                               | TRACE<br>80.6         | 63.5                                   | 3400        | # 4<br># 60<br># 10<br># 10               | . O        | 0.0      |
|         |   |              | lin .            | 314065          | 2006                 | ານ<br>ນ        | POT.<br>VALLI            | POT. NARROW<br>VALLISNERIA AMER                     | 118.2<br>TRACE        | 11 11 11 11 11 11 11 11 11 11 11 11 11 | 3400        | 4 6 4                                     | O .        | 0.0      |
| -       |   | 1            | •                | 6 314065        |                      | 5.5            | P01.                     | POT . NARROW  | 37.2                  | 28.1                                   | 3400        | * 4 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 0.1        | 0.0      |
|         |   | е            | * 1              | 314080          | แล้ เ                |                | NITEL<br>POT. 1<br>VALLI | NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER  | 1.5<br>1.3<br>26.0    | 0.6<br>0.9<br>7.3                      | 1600        | 150                                       |            | 0.1      |
|         |   |              | 7                | 2 314080        | i கே்                | -<br>9         | POT. I<br>VALLI          | POT. NARROW<br>VALLISNERIA AMER                     | 1.3                   | 43.7                                   | 1600        | 150                                       | 0.1        | 0.1      |
|         |   |              | ო                | 3 314080        | 500680               | 6. 1           | POT. VALLE               | POT. NARROW<br>Vallisneria amer                     | 1.9<br>109.3          | 1.3<br>55.0                            | 1600        | 150                                       | 0          | 0.1      |
|         |   |              | ₹                | 314075          | 500685               | ය<br>ව         | POT. (                   | RICHARD<br>SNERIA                                   | 99.2<br>11.7          | 73.8<br>7.2                            | 086         | 130                                       | 0.5        | 0.1      |
|         |   |              | ιn               | 5 314075        | 500685               | ຄ.<br>ໝ        | POT.<br>POT.             |   | 105.6<br>45.3<br>23.3 | 63.2<br>20.0<br>10.5                   | 086         | 130                                       | 0.2        | 0.1      |
|         |   |              | ω                | 314075          | 500685               | ຕ<br>ຕ         | POT.<br>POT.<br>VALLI    | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 78.0<br>0.6<br>10.5   | 47.7<br>0.2<br>6.4                     | ##          |   | 0.2        |          |
|         |   | 4            | - 1              | 1 314086        | 500690               | 3.6            |                          | SNERIA AMER   | 70.3                  | 42.5                                   | 850         | 49  | 0.2        | 0.4      |
|         |   |              | 2                | 2 314086        |                      | 3.6            | VALLISNERI               |   | 34.9                  | 9.8                                    | 850         | 49  | 0.2        | 0.1      |
|         |   |              | 6                | 314086          | 500690               | 9.0            | VALLI                    | . <   | 76.7                  | 34.6                                   | 850         | 64  | 0.2        | 0.1      |

|             |   |          |         |            | VALL                   | ISNERIA  | AMER                             | 100.1                | 28.1                | 3     | •                                     | N . | -<br>S  |
|-------------|---|----------|---------|------------|------------------------|--|----------------------------------|----------------------|---------------------|-------|---------------------------------------|-----|---------|
|             | 2 | 2 314070 | 500683  |            | POT                    | NARROW   | 11<br>10<br>10<br>10<br>10<br>10 | 47.6                 | 19.5                | 1700  | 44                                    | 0.2 | 0.1     |
|             | 6                                       | 314070   | 500683  | £.5        | POT<br>VALL            | POT NARROW                                     | AMER<br>TAMER                    | 62.5 H               | 40.1                | 1700  | # # # # # # # # # # # # # # # # # # # | 0.2 | 0.1     |
|             | 4                                       |          | 500686  | 80<br>80   | P0T.                   | GRAMINEUS                                      | IEUS<br>/                        | 87.9<br>2.7          | 41.6                | 2800  | 6 1                                   |     | 0.1     |
|             | 5                                       | 5 314068 | 500686  | 9.8        | POT.                   | RICHARDSON                                     | DSONI                            | 75.2                 | 45.6                | 2800  | 6.1                                   | 0.3 | 0.1     |
|             |   | 314068   | 500686  | 9.<br>8    | POT.<br>POT.<br>VALL   | RICHARDSONI<br>NARROW<br>ISNERIA AMER          | IDSONI<br>AMER                   | 92.5<br>23.2<br>8.8  | 35.7<br>16.3<br>3.6 | 2800  |                                       |     | 0.1     |
|             |   | 1 314083 | 500695  | က<br>တ     | CHARA<br>POT.<br>VALLI | CHARA SPP.<br>POT. GRAMINEUS<br>VALLISNERIA AM | IEUS<br>AMER                     | 42.1<br>43.6<br>37.5 | 6.9<br>29.2<br>16.7 | 1700  | 20 mm                                 | 0.2 | 0.4     |
|             | 2                                       | 2 314083 | 500695  | က<br>စ     | NITE<br>POT.           | NITELLA HYALINA<br>POT. RICHARDSON             | L INA<br>DSONI                   | 13.8                 | 3.8<br>74.6         | 1700  | 29                                    | 0.2 | 0.4     |
|             | 6                                       | 3 314083 | 500695  | ස<br>ස     | NITEL<br>POT.          | ioz 1  | A HYALINA<br>ICHARDSONI          | 9.0                  | 3.4                 | 1700  | 29                                    | 0.2 | 0.1     |
| 7           | -                                       | 1 314097 | 500705  | 7.3        | VALL                   | VALLISNERIA                                    | AMER                             | 56.3                 | 31.4                | 2000  | 20                                    | 0.4 | 0.4     |
|             | 7                                       | 2 314097 | 500705  | 7.3        | VALL                   | VALLISNERIA                                    | AMER                             | 27.4                 | 17.1                | 2000  | 20                                    | 0.1 | 0.4     |
| #<br>#<br># |   | 3 314097 | 500705  | 7.3        | VALL                   | VALLISNERIA                                    | AMER                             | 79.9                 | 49.3                | 2000  | 20                                    | 0.4 | 0.4     |
|             |   | 1 314077 | 500701  | ro<br>O    | POT.<br>POT.<br>VALL   | GRAMINEUS<br>NARROW<br>ISNERIA AM              | EUS                              | 6.09<br>6.09<br>9.09 | 44.0<br>52.8<br>6.0 | 1100  | 230                                   | 0.0 | 0.0     |
|             | 7                                       | 2 314077 | 500701  | 0. iv      | POT.<br>POT.<br>VALL   | RICHARDSONI<br>NARROW<br>ISNERIA AMER          | DSONI                            | 34<br>2.0<br>3.0     | 24.7                | # COO |                                       |     |         |
|             | 6                                       | 3 314077 | 500701  | 9. O       | P01.                   | GRAMINEUS<br>NARROW                            | EUS                              | 97.6<br>12.3         | 70.3<br>9.6         | 1100  | 230                                   | 0.0 | o.<br>o |
| o           |   | 314091   | 500710  | 6.4        | VALL                   | VALLISNERIA                                    | AMER                             | 40.4                 | 16.1                | 4000  | 590                                   | 0.2 | 0.0     |
|             | 7                                       | 314091   | 5007 10 | <b>4</b> . | CHARA                  | CHARA SPP.                                     | AMER                             | 1.2                  | 6.0<br>8.0          | 4000  | 590                                   | 0.2 | 0.0     |
|             |   | H        | 5007 10 | 9.         | CHARA<br>POT.<br>VALLI | CHARA SPP. POT. NARROW                         | AMER                             | 3,8<br>1,6<br>27.5   | 1.5<br>1.0<br>13.9  | 4000  |                                       | 0.2 | H O     |
| \$ Q        |   | 314103   | 500716  | 1 00 I     | VALE                   | VALLISNERIA                                    | AMER                             |                      | 30.2                | 2000  | 200                                   |     | 0.2     |
|             | 7                                       | 2 314103 | 500716  | 8          | VALL                   | VALLISNERIA                                    | AMER                             | 61.9                 | 28.9                | 2000  | 200                                   | 0.3 | 0.2     |
| 6           | 3                                       | 314103   | 500716  | 8          | VALL                   | SNFRIA   | AMER                             | 153.0                | 5.02                | 2000  | ç                                     |     |         |

| =  | - ! | 1 314086 500714 | 500714  | £.0       | POT. NARROW<br>VALLISNERIA                  | NARROW<br>SNERIA AMER                                 | 13.1                | 16.0<br>8.6         | 3800                                     | 220  | 6.0     | 0.1     |
|----|-----|-----------------|---------|-----------|---|---|---------------------|---------------------|--|--|---------|---------|
|    | 2   | 2 314086 500714 | 500714  | بر<br>-   | NITELLA HYAL<br>Pot. Narrow<br>Vallisneria  | NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER    | 0.6<br>0.4<br>28.3  | 0.3<br>0.3<br>18.8  | 3800                                     | 220  |         | M T . O |
|    | е   | 3 314086 50071  | 500714  | 5.1       | NAJAS FLEXIL<br>NITELLA HYAL<br>VALLISNERIA | NAJAS FLEXILIS<br>NITELLA HYALINA<br>VALLISNERIA AMER | 0.4<br>2.6<br>15.2  | 0.2                 | 3800<br>3800<br>1000<br>1000             | и<br>н н н н н н н н н н н н н н н н н н н | . O . 3 | 0       |
|    | 4   | 4 314087 500714 | 500714  | 4         | POT. RICHARD                                | RICHARDSONI<br>SNERIA AMER                            | 47.7                | 36.8                | 610                                      | # # # # # # # # # # # # # # # # # # #      |         | m       |
|    | ro. | 5 314087 500714 | 500714  | 4         | POT. RICHARG<br>POT. NARROW<br>VALLISNERIA  | RICHARDSONI<br>NARROW<br>SNERIA AMER                  | 78.0                | 49.4<br>3.5<br>12.4 | 6 10 11 11 11 11 11 11 11 11 11 11 11 11 |  |         | 0.1     |
|    |     | 6 314087 500714 | 500714  | 4 .       | POT. RICHARC<br>POT. NARROW<br>VALLISNERIA  | RICHARDSONI<br>NARROW<br>SNERIA AMER                  | 62.5<br>1.6<br>13.4 | 36.6<br>1.1<br>9.2  | 610                                      | 47   | 0.1     |         |
| 5  | ; ' | 1 314098 500718 | 5007 18 | 9. e      | NITELLA HYAL<br>VALLISNERIA                 | NITELLA HYALINA<br>VALLISNERIA AMER                   | 0.7                 | 0.3<br>13.6         | 2100                                     | 140  | 0.5     | 0.2     |
|    | 2   | 2 314098 500718 | 500718  | 3.9       | VALLISNERIA                                 | NERIA AMER  | 53.7                | 28.0                | 2100                                     | 140  | 0.2     | 0.2     |
|    | e e | 3 314098 500718 | 5007 18 | හ<br>ග    | NITELLA HYAL<br>VALLISNERIA                 | NITELLA HYALINA<br>VALLISNERIA AMER                   | TRACE<br>29.1       | 15.7                | 2100                                     | 140  | 0.2     | 0.2     |
| 13 | -   | 1 314094 500727 | 500727  | 6.3       | POT. RI                                     | OT. RICHARDSONI                                       | 325.0               | 232.0               | 2000                                     | 30   | 0.1     | 0.0     |
|    | 7   | 2 314094 50     |         | 6.3       | POT. RICHA                                  | RICHARDSONI   | 0.66                | 66.8                | 2000                                     | 30   | 0.1     | 0.0     |
|    | 6   | 3 314094 50072  | 500727  | 6.3       | POT. RJ                                     | POT. RICHARDSONI                                      | 205.6               | 138.2               | 2000                                     | 30   | 0.1     | 0.0     |
| 4  | -   | 1 314106 50     | 500736  | 6.4       | VALLISNERIA                                 | NERIA AMER  | 36.0                | 21.0                | 1500                                     | 80   | 0.1     | 0.0     |
|    | 7   | 2 314106 500736 | 500736  | 8<br>4.   | POT. NARROW<br>VALLISNERIA                  | NARROW<br>SNERIA AMER                                 | 2.1<br>34.1         | 1.5<br>20.0         | 1500                                     | 80   | 0.1     | 0.0     |
|    | 6   | 3 314106 500736 | 500736  | 6.4       | VALLISNERIA                                 | VALLISNERIA AMER                                      | හ <sub>.</sub> හ    | O. 9                | 1500                                     | 80   | 0.1     | 0.0     |
|    | 4   | 4 314103 500733 | 500733  | <b>60</b> | POT. RJ                                     | POT. RICHARDSONI                                      | 130.7               | 104.5               | 760                                      | 98   | 9.0     | 0.2     |
|    | S.  | 314103 500733   | 500733  | e0<br>-   | POT. RI                                     | RICHARDSONI   | 130.9               | 0.96                | 760                                      | 96   | 9.0     | 0.2     |
|    | 9   | 6 314103 500733 | 500733  | 8         | POT. RI                                     | RICHARDSONI   | 78.2                | 57.6                | 760                                      | 98   | 9.0     | 0.2     |

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

BLOCK

ISLAND

RIVER

STONY

DETROIT

N

İ

ASH-FREE LIGHT(FOOT CANDLES) CURRENT(FT./SEC.) SURFACE BOTTOM <del>-</del> 0.0 0. 0 ÷. 0.0 0.0 0.0 <del>-</del> <u>.</u> <u>.</u> <u>.</u> . 5 0.5 . 5 £. 6.0 6.0 0.5 0.5 **4**. 4.0 0.5 9.0 o .s 0.5 NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2 SURFACE BOTTOM 120 20 120 \_ 59 ဓ္ဓ 27 27 29 29 ဓ္ဗ <del>1</del> <del>0</del> 270 270 8 8 **4** 128 270 880 1800 880 33.6 900 <del>2</del>8 176.7 1700 5 20.5 78 8 7.2 7.07 0.00 0.0 162.8 2.6 . . 34.0 94.3 12.3 28.7 33.2 34.8 20.3 2.1 2.7 15.5 ъ. (G/M2) WEIGHT DRY WEIGHT 9.2 12.9 114.7 2.2 10.1 35.0 220.1 23.2 6.4 21.7 149.6 11.6 16.5 11.3 58.5 36.5 5.4 0.0 74.7 93.1 15.4 125.2 60.6 246.7 49.4 16.3 贝斯坦兹林德锡的现代林斯利的过程等级信用或外领地领性加快标列目的领域器的关系的外域和的对抗组织新国的实际和 1.我间间面间插线台间通讯分词间间的转针分类和时间间间间的同时形式和现代的形式的形式和影响和图 的复数形式的现在分词有限的变形的复数形式的复数形式的复数形式的复数形式的现在分词 314233 500982 9.9 VALLISNERIA AMER 314233 500982 9.9 VALLISNERIA AMER 314203 500979 8.1 VALLISNERIA AMER 314233 500982 9.9 VALLISNERIA AMER 314200 500976 7.9 POT. RICHARDSONI VALLISNERIA AMER VALLISNERIA AMER 314212 500978 8.1 POT. RICHARDSONI POT. RICHARDSONI VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER VALLISNERIA AMER POT. RICHARDSONI VALLISNERIA AMER POT. RICHARDSONI MYRIO. SPICATUM ELODEA CANADENS MYRIO. SPICATUM 314212 500978 8.1 POT. GRAMINEUS POT. CRISPUS MACROPHYTE POT. CRISPUS POT. NARROW POT. NARROW NARROW POT. NARROW POT. NARROW NARROW NARROW 314212 500978 8.1 DEPTH (FT.) 314200 500976 7.9 314200 500976 7.9 314203 500979 8.1 314203 500979 8.1 314187 500974 8.3 314187 500974 8.3 314187 500974 8.3 LOWER LORAN COORDINATES UPPER REPLICATE ø m 4 ~ 10 6 ~

410

450

6.0

7.0 37.5

20.6

0

6 0

0.0

6.0

4 10

4500

36.0

120.6

POT. ZOSTERIFORM

9.

314228 500984

N

VALLISNERIA AMER

POT. NARROW

314228 500984 7.9

(1)

VALLISNERIA AMER

POT NARROW

7.9

314228 500984

6.0

4 10

4500

e

| 1        | 计数据 医医骨骨 化二甲基苯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基 | # H           | #<br>#<br># | VALLISNERIA AMER                                    | 15.7                             | 8.6                        |   | į                                     |     |     |
|----------|--|---------------|-------------|---|----------------------------------|----------------------------|---|---------------------------------------|-----|-----|
|          | 314224 5   | 500987        | 1.8         |   | 524.6<br>110.8                   | 285.9<br>59.8              | 14<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10            |                                       | 0.1 | 0.0 |
|          | 2 314224 5   | 500987        | <b>6</b> 0  | ELODEA<br>MYRIO.<br>POT. CR                         | 210.6<br>90.2<br>8.9             | 148.7<br>65.4<br>7.6       | P<br>#<br>#<br># 1<br>#<br>#  | # # # # # # # # # # # # # # # # # # # | 0.1 | 0.0 |
| _        | 314224   | Y Q           | n i         |   | 447.6<br>97.6                    | 250.1<br>56.8              | ** ** ** ** ** ** ** ** ** ** ** ** **  |                                       | 0.1 | 0.0 |
|          | 314237   | 500992        | 0. ₹        |   | 6.1.4<br>6.1.4<br>6.101.7<br>6.0 | 1.0<br>56.7<br>1,1<br>67.1 | 3700  | 130                                   | 1.2 | 0.0 |
| <u>.</u> | 2 314237 5   | 500992        | 4           |   | 25.2<br>204.4<br>14.4<br>298.4   | 144.3<br>144.3<br>13.2     | 3700  |                                       | 1.2 | 0.0 |
|          | 3 314237 56  | 500992        | 4<br>O      |   | 137.0<br>0.9<br>265.2<br>2.3     | 70.2<br>4.4<br>6.40<br>1.3 | 3700  | 130                                   | 1.2 | 0.0 |
|          | 314227 5   | 314227 500994 | 2<br>.8     | HETERANTHERA DUB                                    | 188.5                            | 115.5                      | 3000  | 510                                   | 0.4 | 0.0 |
|          |  | 314227 500994 | 2,<br>80    | ELODEA CANADENS<br>HETERANTHERA DUB<br>POT. CRISPUS | 2.3<br>50.8<br>23.0              | 0.1<br>36.0<br>16.8        | 3000  | 510                                   | 4.0 | 0.0 |
|          | 3 314227 50  | 500994        | 2.8         | HETERANTHERA DUB                                    | 306.4                            | 153.6                      | 3000  | 510                                   | 0.4 | 0.0 |
| ä        | 314247 S   | 314247 500999 | 4           | HETERANTHERA DUB<br>Myrio. Spicatum                 | 0.6                              | 0.4                        | . 3500  | 270                                   | 1.3 | . O |
|          | 314247 5(  | 500999        | 4.1         | MYRIO. SPICATUM                                     | 9.80                             | 78.5                       | 3500  | 270                                   | 1.3 | 0.5 |
| :        | 3 314247 50  | 314247 500999 | 4           |   | 171.1                            | 102.3                      | 3500  | 270                                   | 1.3 | 0.5 |
|          | 314238 5(  |               | 2.0         |   | 174.7                            | 77.4                       | 1400  |                                       | 0.2 | 0.1 |
|          | 2 314238 50  | 314238 500998 | 2.0         |   | 7 .8<br>19 .8                    | 6.4<br>0.11                | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | M CO                                  | 0.2 | 0.1 |
|          | 314238 50  | 500998        | <b>6</b>    | ELODEA CANADENS<br>HETERANTHERA DUB<br>POT. CRISPUS | 0.2<br>125.0<br>2.0              | 55. ±                      | 1400  | # F CO # F                            | 0.2 | 0.1 |
|          |  |               |             |   |                                  |                            |   |                                       |     |     |

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1, (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND   | D BLOCK<br>NO. | REPLICATE<br>NO. | COORDIN          | < Z              | DEPTH<br>(FT.)       | MACR                                    | MACROPHYTE<br>TAXON                        | DRY WEIGHT                                  | ASH-FREE L                              | .1GHT (F00T  | . !                    | CURRENT (F            | T./SEC.)             |
|----------------|----------------|------------------|------------------|------------------|----------------------|---|--|---|---|--------------|------------------------|-----------------------|----------------------|
| ST. CLAIR STAG |                | 1 2              | 309027<br>309027 | 497379<br>497379 |                      | #<br>#<br>#<br>#                        |  | (6/MZ)  *********************************** | (G/M2)                                  | 3800<br>3800 | 80110M<br>1300<br>1300 | SURFACE<br>2.9<br>2.9 | 80TTOM<br>2.4<br>2.4 |
|                | *              |                  | 309027           | 497379           | 12.0                 | * | NO PLANTS                                  | PRESENT                                     | *************************************** | 3800         | 1300                   | 2.9                   | 2.4                  |
|                | ~              | - 0              | 309038           | 497383           | 12.5<br>12.5<br>13.5 |   | NO PLANTS                                  | PRESENT                                     |   | 4500         | 85                     | 9.0                   | 0.0                  |
|                | į              | 6                | 309038           | 497383           | 12.5                 |   |  | PRESENT                                     |   | 4500         | <u>\$</u>              | 9.6                   | 0.0                  |
|                |                |                  | 309026           | 497384           | 1.5                  |   | •  | PRESENT                                     |   | 3000         | 1200                   | 2.5                   | 2.0                  |
|                |                | 0 D              | 309026           | 44               | = =                  |   | NO PLANTS                                  | PRESENT<br>PRESENT                          |   | 3000         | 1200<br>1200           | 9. 9.<br>Ri Ri        | ач<br>00             |
|                | 4              |                  | 309040<br>309040 |                  |                      |   |  | PRESENT<br>PRESENT                          |   | 3800         | 1200<br>1200           | 4.4                   | 2.0                  |
|                |                |                  | 308040           |                  | 7.7                  |   | NO PLANIS                                  | FRESEN.                                     |   | 3800         | 1200                   | 2.4                   | 2.0                  |
|                | <b>I</b> O     | -                | 1 309034         | 497394           | 6.0                  | CHARA<br>POT. N                         | SPP.                                       | 1.7<br>35.2                                 | 30.5                                    | 180          | 140                    | 1.7                   | 0.1                  |
|                |                | 7                | 309034           | 497394           | හ<br>ග               | . ≨ .                                   | SPP.                                       | 1.2   | O RU<br>4. @                            | 180          | - <del>1</del>         | 1.7                   | 0.                   |
|                |                | 0                | 309034           | 497394           | 9.5                  | POT. R                                  | NARROW                                     | 60  | 13.7                                    | 180          | 140                    | 1.7                   | 0,0                  |
|                | <b>v</b>       |                  | 309041           | 497398           | 7.0                  |   | SPP.                                       | 48.0<br>79.3                                | 75 A<br>70 80<br>70 60                  | 2700         | 240                    | 1.2                   | 4.0                  |
|                |                | 6                | 309041           | 497398           | 7.0                  | <b>.</b>                                | SPP.<br>GRAMINEUS<br>NARROW                | 244.1<br>74.6<br>3.0                        | 74.9<br>52.5<br>2.3                     | 2700         | 240                    | 1.2                   | 4.0                  |
|                | ,              |                  | 3 309041         | 497398           | 7.0                  | # <b>&amp;</b> .                        | SPP.<br>GRAMINEUS                          | 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4     | 0.6                                     | 2700         | 240                    | 4.2                   | . O . A . O          |
|                | ۲              |                  |                  | 497396           | 7.0                  | CHARA<br>POT G<br>POT N                 | SPP.<br>GRAMINEUS<br>NARROW                | 43.7<br>122.0<br>10.6                       | 44.2<br>80.1<br>8.1                     | 3500         | 0                      | 4.                    | 0.2                  |
|                |                | 7                | 2 309038         | 497396           | 7.0                  | CHARA<br>POT. G                         | SPP.<br>GRAMINEUS<br>NARROW                | 124.5<br>145.4<br>32.9                      | 41.4<br>101.9<br>26.3                   | 3500         | 0                      | £.                    | 0.2                  |
|                |                | ro<br>O          | 309038           | 497396           | 7.0                  | • • •                                   | SPP.<br>GRAMINEUS<br>RICHARDSONI<br>NARROW | 26.0<br>26.0<br>26.0                        | 3.0<br>105.3<br>4.1<br>20.5             | 3500         | 0                      | 4 .                   | 0.2                  |
|                |                |                  | 309033           | 497391           | 0.                   | CHARA<br>POT. G                         | SPP.                                       | 182.0<br>32.3                               | 53.8<br>24.3                            | 3200         | 1900                   | 60                    | <br>S                |
|                |                | ಸ                | 309033           | 497391           | 0                    | CHARA<br>POT. G                         | SPP.<br>GRAMINEUS                          | 170.1                                       | 6.4.0<br>6.4.0                          | 3200         | 1900                   | e. <del>-</del>       | r                    |

| y                    | 6 309033 4 | 497391 | 0.     | CHARA<br>POT.                           | SPP.<br>GRAMINEUS<br>NARROW   | 103.9<br>60.0<br>1.4   | 46.1                            | 3200       | 1900 | H H G)      | # ← (             |
|----------------------|------------|--------|--------|---|---|--|---------------------------------|------------|------|-------------|-------------------|
| -                    | 309048     | 497406 | 12.0   |   | R I CHARD SON I<br>NARROW   | 108.7  | 81.6<br>53.3                    | 5 100      | 29   | 9.0         | 0.2               |
| <b>)</b>             | 309048 4   | 497406 | 12.0   | ELODEA<br>NITELL/<br>POT. R.<br>POT. N. | ELODEA CAMADENS<br>NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW | 0.55<br>42.77<br>6.68  | 32.6<br>33.6<br>33.6            | 100<br>100 | 58   | 9.0         | . 2               |
| က                    | 309048 4   | 497406 | 12.0   | ELODE/<br>NITELI<br>POT. P              | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW | 60.0<br>4.4<br>60.1  | 51.0<br>45.3<br>26.3            | 5100       | 59   | 9.0         | 0.0               |
| 4                    | 4 309045 4 | 497405 | O.     | CHARA<br>ELODEA<br>MYRIO.<br>POT. N     | CHARA SPP.<br>ELUDEA CANADENS<br>MYRIO. SPICATUM<br>POT. NARROW       | TRACE<br>64.3<br>30.0<br>162.1   | 46.2<br>24.2<br>131.0           | 4500       | 0    | 9.0         | o.<br>+           |
| ហ                    | 5 309045 4 | 497405 | 0.6    | CHARA<br>ELODE/<br>POT.                 | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI                     | 5 7 2  | 1.3<br>118.2<br>9.7             | 4500       | 0    | 9·0         | o. <del>1</del>   |
| ဖ                    | 309045     | 497405 | O. 00  | . 4 m 0 .                               | NADENS<br>ICATUM<br>OW  | TRACE<br>38.0<br>TRACE<br>57.9   | 27.1                            | 4500       | o    | <b>9</b> .0 | -                 |
| 9 1 309039 4         | 30903      | 497397 | 0.0    | CHARA<br>ELODE/<br>MYRIO<br>POT.        | S   | 6 - 32<br>6 - 30<br>6 - 3<br>6 - 3<br>6 - 3<br>7 - 3<br>8 br>8 - 3<br>8 | 6.7<br>6.7<br>7.6<br>6.4<br>6.6 | 3700       | 0    | o. 3        |                   |
| <b>a</b>             | 2 309039 4 | 497397 | ō.0    | ELODEA<br>MYRIO.<br>Pot. RI             | A CANADENS<br>SPICATUM<br>RICHARDSONI                                 | ට .<br>39 . ය<br>පි. පී  | 0.3<br>32.2<br>37.2             | . 3700     | o    | e.<br>0     | ÷.                |
| # CO                 | 3 309039 A | 497397 | 0.0    | MYRIO. SP<br>POT. RICH                  | SPICATUM<br>RICHARDSONI   | 60.0<br>76.0   | 47.5<br>59.3                    | 3700       | 0    | 0.3         | o. <del>-</del>   |
| 4                    | 4 309035 4 | 497396 | 0.     | CHARA<br>ELODE/<br>MYRIO                | . A   | TRACE<br>10.6<br>212.7   | 7.9<br>153.6                    | 3700       | 2    | 0.2         | -<br>- ·          |
|                      | 5 309035 4 | 1 O    | 0.6    | ELODEA<br>Myrio.                        | S   | 7.5<br>70.6  | 5.3<br>56.7                     | 3700       | 7    | 0.2         | <del>-</del><br>0 |
| й<br>И<br>И<br>Ф     | 309035 4   | 497396 | , O    | ELODEA<br>MYRIO.<br>POT. C              | A CANADENS O SPICATUM CRISPUS   | 1.5<br>140.5<br>TRACE  | 1.0<br>104.3                    | 3700       | 7    | 0.2         |                   |
| # L                  | 7 309036 4 | 497405 | 3.0    | CHARA                                   |   |  | 38.4                            | 190        | 140  | 0.5         | 9.0               |
| 500                  | 309036     |        | k<br>V | CHARA                                   |   | 120.1  | 41.7                            | 190        | 140  | 0.5         | 0.4               |
| H<br>H<br>H (5)<br>H | 9 309036 4 | 497405 | 3.0    | CHARA                                   | SPP.  | 144.8  | 45.0                            | 190        | 140  | O.5         | 4.0               |

| ō                          | -        | 309058     | 497410 | 12.0           | ELODEA CANADENS  | 20.0<br>TDACF                             | 14.5                                    | 5100   | 500   | 6.0     | 0.2               |
|----------------------------|----------|------------|--------|----------------|--|---|---|--|-------|---------|-------------------|
|                            | 1        |            |        |                | POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER  | 1.7<br>41.7<br>TRACE                      | 1.3                                     |  |       |         |                   |
|                            | 6        | 2 300038 / | 497410 | 12.0<br>0      | EA CANAD<br>LLA HYAL<br>RICHARD<br>NARROW  | # # # # # # # # # # # # # # # # # # #     | 10.1<br>0.3<br>5.8<br>119.7             |  | 200   | 6.<br>0 | 0.2               |
|                            | m        | 309058     | 014704 | 12.0           | ELODEA CANADENS<br>MYRIO. SPICATUM<br>NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW<br>VALLISNERIA AMER | 3.5<br>3.5<br>4.1<br>6.6<br>1RACE         | # 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 25<br>00 00<br>00 |       | ø.<br>O | 0.2               |
| <u>-</u>                   |          | 309055     | 497413 | 12.0           | CHARA SPP.<br>POT. RICHARDSONI<br>POT. NARROW  | 33. t                                     | 1.2<br>2.7<br>26.7                      | 160  | 140   | ф.<br>О | 0                 |
|                            | 2        | 308055     | 497413 | 12.0           |  | 198.4                                     | 154.7                                   | 160  | 140   | 8.0     | 0.1               |
|                            | <b>г</b> | 309055 4   | 497413 | 12.0           | EA CANAD<br>LLA HYAL<br>RICHARD<br>NARROW  | a.e<br>4.0<br>7.00<br>7.00                | 2.1<br>0.0<br>117.5                     | 160  | 140   | 6. O    | 0.                |
|                            |          | 309047     | 497407 | <b>80</b><br>O | CHARA SPP.<br>ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW                           | TRACE<br>TRACE.<br>192.3<br>TRACE         | 20.3<br>83.2                            | 4600   | 2800  |         | O . G             |
|                            |          | 309047     | 497407 | o.             | CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. GRAMINEUS POT. RICHARDSONI                                   | 10.2<br>1.2<br>1.2<br>79.3<br>1.2<br>51.9 | 6.4<br>0.7<br>0.0<br>0.0                | 4600   | 2800  |         | 0.5               |
|                            | g        | 309047 4   | 497407 | <b>6</b>       |  | TRACE<br>2.0<br>33.3<br>85.0              | 2000 H                                  | 4600   | 2800  |         | G                 |
|                            | 7        | 309053     | 497410 | 7.0            | CHARA SPP.   | H CO                                      | 34.5                                    | 330  | 140   | 0.2     |                   |
|                            | 50       | 8 309053   | 141    | 7.0            | CHARA SPP.   | 65.7                                      | 22.3                                    | 330  | 140   | 0.2     | 0.2               |
| #<br>#<br>#<br>#<br>#<br># | 6        | 309053     | 1 44 H | 7.0            |  | 63.7                                      | 25.4                                    | 330  | 140   | 0.2     | 0.2               |
|                            |          | 309042     | 497412 | 0.0            | A CAN<br>CRISPI<br>CRISPI<br>RICHA<br>ZOSTE  | 64.8<br>9.22.9<br>6.25.<br>6.25.          | 52.1<br>15.6<br>7.6<br>12.1<br>16.5     | 4000   | 31,00 | 0.2     | <del>-</del><br>0 |

| 7                | 2 309042 49                            | 309042    | 497412                                  | 0.6                 | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. ZOSTERIFORM                      | 60.7<br>37.7<br>M 0.8                    | 47.0<br>27.9<br>0.6                              | 4000 | 3100  | 0.2             | ٠                 |
|------------------|--|-----------|---|---------------------|---|--|--|------|---|-----------------|-------------------|
| # f5             | H<br>H<br>H                            | 309042 49 | 497412                                  | 0.0                 | POT. RICHARDSONI<br>VALLISNERIA AMER  |  | # # # # # # # # # # # # # # # # # # #            | 4000 | 3100  | 0.2             | 0.4               |
| 4                | #                                      | 309041 49 | 4 9 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 1 10<br>1 10<br>1 0 | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. ZOSTERIFORM  | 10.2<br>111 18.1<br>18.1 0.7<br>18.0 0.7 | r c 2<br>c 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 4000 | 3100  | 0.5             | o<br>•            |
|                  | 5 309041 49                            | 309041 49 | 497411                                  | ທ                   |   | # H #                                    | 7.7<br>0.7<br>7.44<br>7.45                       | 4000 | e<br>00<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10 | 0.2             | <del>-</del><br>0 |
| 9                | 6 309041 49                            | 309041 49 | 497411                                  | រភ<br>ចា            | ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. ZOSTERIFORM<br>VALLISNERIA AMER | _  | 32.8<br>8.7.4<br>7.3.8<br>6.3.4                  | 4000 | 9100<br>001<br>001  | 0.2             | o.<br>+           |
|                  |  | 309042 49 | 497411                                  | •<br>•              | CHARA SPP.<br>VALLISNERIA AMER  | 276.4<br>4.2                             | 99.4<br>2.8                                      | 140  | 50<br>0   | 0.2             | 0.1               |
| i ~              | 9 K                                    | 309042 49 | 497411                                  | 0.4                 | •   | 4  | 86 . 55  | 140  | <del>1</del> 00   | 0.2             |                   |
|                  | 9 309042 49                            | 309042 49 | 497411                                  | 0.4                 |   |  | <b>9</b> .06                                     | 40   | 8   |                 | 0.4               |
| 6                | 309058 49                              | 309058 49 | 497414                                  | 12.0                | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. CRISPUS<br>POT. RICHARDSONI      | 21.1<br>3.5<br>22.8<br>34.2              | 81<br>20.2<br>20.3<br>4.03<br>4.03               | 4700 | ဗ   | <del>-</del>    | o.<br>o           |
| ī ``             |  | 309058 49 | 497414                                  | 12.0                | . 0   |  | 9.98.<br>36.6                                    | 4700 | 33  | o. <del>1</del> | 0.0               |
| <b>i</b> ''      |  | 309058 49 | 497414                                  | 12.0                | ELODEA CANADENS<br>MYRIO. SPICATUM<br>POT. RICHARDSONI                      | 0.6<br>14.7<br>11.7                      | O Ó ≟<br>40. ñ. æ.                               | 4700 | 33  | O<br>           | 0.0               |
| 4                | #<br>#<br>#<br>#                       | 309070 49 | 497423                                  | O.                  |   | 3.1<br>41 90.2<br>36.7                   | 1.1<br>71.0<br>28.8                              | 4900 | 2700  | 2.3             | 6.                |
| <b>.</b> ``      |  | 309070 49 | 497423                                  | φ                   | CHARA SPP.<br>POT. RICHARDSON!<br>POT. NARROW                               | 0.3<br>VI 28.2<br>6.1                    | 0.1<br>18.2<br>3.3                               | 4900 | 2700  | ı · •           | 6.                |
| i ''             | 3 309070 40                            | 309070 49 | 497423                                  | 0.9                 |   | TRACE<br>4I 78.6<br>8.1                  | 52<br>6.4  | 4900 | 2700  | 64<br>65        | 6.                |
| N<br>N<br>H<br>H | ************************************** | 309073 49 | 497433                                  | 5.0                 | POT. NARROW   | 33.7                                     | 19.3   | 3700 | 3100  | 0.5             | 0.5               |
| i ''             | вининцепанинения<br>2 309073 49        | 309073 49 | 497433                                  | 5.0                 | CHARA SPP.<br>POT. NARROW   | TRACE<br>125.8                           | 7.78   | 3700 | 3100  | 0.5             | 0.5               |
|                  |  |           |   |                     |   |  |  |      |   |                 |                   |

| 0 | 309073                                      | 407433 | u    | 5       |  | 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2   |          |          |              |     |     |
|---|---|--------|------|---------|--|---|----------|----------|--------------|-----|-----|
|   |   | 101    | D    | <br>6 6 | COCCI 19715 5.0 PUT. GRAMINEUS POT. NARROW | 8.4.4   | 2.9      | 2.9 3700 | 3100         | 0.5 | 0.5 |
| 7 | 200074                                      | 407400 |      |         | <b>新教育教育的教育教育的</b>                         | ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・  |          | ****     |              |     |     |
|   | CCCCLL 10/120 Z.S CHARA SPP.<br>POT. NARROW | 671/61 | r. 7 | POT .   | POT . NARROW                               | 140.5   | 54.6 350 | 350      | 240          | 0.7 | 0.4 |
|   |   | *****  |      |         |  |   | 2.6      |          |              |     |     |
| n | 308074 497429 2.5 CHARA SPP.                | 497429 | S    | CHAR    | A SPP.                                     | 119.8   | 36.1.350 | 350      |              |     |     |
|   |   |        | 1    | P01.    | POT GRAMINEUS                              | 9.0   | 0.5      | 3        | )<br>*       | 0.4 | •   |
| Œ | 20001                                       | 401400 |      |         |  | 2000年 - 1990年 |          |          |              |     |     |
| • | COSCIA 44/428 Z.S CHARA SPP.                | 674/64 | N.   | CHAR    | CHARA SPP.                                 | 157.2   | 56.2     | 350      | 56.2 350 240 |     |     |

L-103

NGTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND   | ISLAND | BLOCK<br>NO.                            | ~ :   | PLICATE LOI<br>NO. COORD.<br>UPPER | RAN<br>INATES<br>LOWER | <b>DEPTH</b> (FT.) | MACROPHYTE<br>TAXON                                    |   | DRY WEIGHT<br>(G/M2) | ASH-FREE L<br>Weight<br>(G/M2) | LIGHT (FOOT | CANDLES) | CURRENT(F) | ./SEC.) |
|----------------|--------|---|-------|------------------------------------|------------------------|--------------------|--|---|----------------------|--------------------------------|-------------|----------|------------|---------|
| ST. CLAIR FAWN | FAWN   |   |       | 309568                             | 498250                 | 10.0               | POT. GRAMINEUS   | NEUS                                    | 86.4                 | 65.8                           | 550         | 24       | 2.6        | 0.3     |
|                |        |   | 2     | 309568                             | 4 1                    | 10.0               |  | NEUS                                    | 76.8                 | 6.09                           | 550         | 24       | 2.6        | 0.3     |
|                |        | H<br>H<br>H<br>H                        | 6     | 309568                             | 4                      |                    |  | NEUS                                    | 93.5<br>5.6          | 73.4                           | 550         | 24       | 2.6        | 0.3     |
|                |        | 8                                       | -     | 309580                             | 80                     | 1                  | CHARA SPP.<br>ELODEA CANADENS<br>POT. GRAMINEUS        | ADENS<br>NEUS                           | 144.5                | 0.1<br>2.8<br>105.1<br>14.1    | 850         | ,<br>E   | o.s        | 0.0     |
|                |        |   | 7     | 309580                             | 498256                 | י<br>נא            | NITELLA HYALINA<br>POT. RICHARDSON<br>POT. NARROW      | LA HYALINA<br>RICHARDSONI<br>NARROW     | 123.5<br>9.5         | 1.6<br>90.7<br>7.7             | 850         |          | b. 0       | 0.0     |
|                |        |   |       | 3 309580                           | 498256                 | ຍ.<br>ເບ           | ELODEA CANADENS<br>NITELLA HYALINA<br>POT. RICHARDSON) | CANADENS<br>L HYALINA<br>CHARDSONI      | # O O O O            | 2.5<br>135.3                   | 850         | e        | e. 0       | 0.0     |
|                |        |   | 4 1   | 309581                             | 498255                 | 7.0                | CHARA SPP.<br>POT. GRAMINEUS                           | VEUS                                    | 362.5<br>14.4        | 97.3                           | 1400        | 410      | 1.7        | 6.0     |
|                |        |   |       |                                    | 498255                 | 7.0                | CHARA SPP.   | ZEUS                                    | 9.9<br>0.9           | 29.2                           | 1400        | 4.0      | 1.7        | 6.0     |
|                |        | #<br>#<br>#<br>#                        | ø     | 309581                             | 498255                 | 7.0                | CHARA SPP.<br>Pot. Gramineus                           | ZEUS                                    | 219.2<br>4.0         | 48.2                           | 1400        | 410      | 1.7        | 0.0     |
|                |        | m                                       |       | 1 309590                           | 498263                 | 0.0<br>10.0        | NITELLA HYALINA<br>POT. RICHARDSONI<br>POT. NARROW     | AL INA<br>2DSONI                        | 1.8<br>70.3<br>0.2   | 4.04<br>4.05<br>4.05           | 1700        | # C -    | ю.<br>О    | 0.0     |
|                |        |   | CO 8  | 2 309590                           | 498263                 | 0.0                | A SPP<br>RICHA<br>NARRC                                | RDSONI<br>NV<br>OBTUSA                  | 135.9<br>2.3<br>13.5 | 00<br>00.±<br>7.7.±            | 1700        | 8 C C    |            | o.<br>o |
|                |        |   | 6     | 309590                             | 498263                 | 0.0                | POT. RICHARDSONI<br>NITELLOP. OBTUSA                   | RDSONI<br>OBTUSA                        | 54.6<br>9.4          | 39. 1                          | 1700        |          | 0.3        | 0.0     |
|                |        |   | 4 2   | 309579                             | 498261                 | 5.0                | CHARA SPP.   | R W W W W W W W W W W W W W W W W W W W | 265.0                | 59.9                           | 1500        | 440      | 1.6        | 4.4     |
|                |        |   |       | 309579                             |                        | 5.0                | CHARA SPP.   |   | 224.3                | 62.9                           |             | 440      | 1.6        | 4.4     |
|                |        | *************************************** | 9     | 6 309579                           | 498261                 | 5.0                | CHARA SPP.   |   | 211.4                | 65.1                           |             | 440      | 9.1        | 1.4     |
|                |        | 4                                       | - H   | 1 309578                           | 4 1                    | 2.5                | Z .  |   | 159.1<br>3.4         | 33.6<br>2.4                    | 1500        | 840      | 1.2        | 6.0     |
|                |        |   | 8 7 H | 309578                             | 498261                 | 4.5 (              | CHARA SPP.   | W<br>  M<br>  H<br>  H<br>  H<br>  H    | 282.7                | 500 H                          | 1500        | 840      | 1          |         |

| ;<br>; | 3               | 309578   | 498261 | 4.5         | CHARA SPP.   | 170.1  | 34.9   | 1500              | 840               | 1.2         | 6.0             |
|--------|-----------------|----------|--------|-------------|--|--|--|-------------------|-------------------|-------------|-----------------|
| #<br>! |                 | 309601 4 | 498269 | ເນ<br>ເນ    |  | 856.9<br>23.5<br>49.5<br>4.7                 | 289.0<br>14.4<br>31.0<br>3.6                 | <del>.</del><br>8 | 400               |             | 0.2             |
|        | 2               | 309601   | 498269 | ស<br>ស      | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS<br>VALLISNERIA AMER | 327.8<br>0.7<br>34.7<br>5.2                  | 104.3<br>0.4.3<br>3.8                        | <del>,</del>      | 400               |             | 0.2             |
|        | က               | 309601   | 498269 | ស<br>ស      | A SPP<br>S FLE<br>GRAM<br>NARR<br>ISNER                            | 350<br>26.0<br>26.0<br>66.0<br>66.0          | 34.6<br>6.33<br>6.4.0<br>4.0<br>8.+          | <u>.</u><br>8     | <del>1</del> 00   | 4           | 0.2             |
|        | -               | 309594   | 498269 | <b>4</b> .0 | CHARA SPP.<br>POT. GRAMINEUS                                       | 251.3<br>0.4                                 | <b>4</b> 9.9<br>0.3                          | 2400              | 2200              | <b>6</b> .0 | <b>6</b> .0     |
|        | <b>i</b>        | 309594   | 498269 | 0.4         | 4 W  | 460.8<br>1.8<br>2.9                          | 2.4.2<br>4.2<br>6.0<br>6.0                   | 2400              | 2200              | 6.0         | . O             |
|        | ю               | 308584   | 4      | 0.4         |  | 58.5<br>TRACE                                | 17.6   | 2400              | 2200              | 6.0         | σ.              |
|        | -               | 309585 4 | 498267 | о           | <b>₹</b> 9   | 29<br>0.00<br>4.00.22<br>0.00.00<br>0.00.00  | 8.00<br>8.00<br>8.00<br>7.40<br>8.00<br>8.00 | <b>8</b><br>20    | <b>,</b>          | 0.2         |                 |
|        | 2               | 309585   | 498267 | 9.0<br>0.0  | A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                            | 4.0<br>4.2.9<br>6.3.9                        | 0.1<br>51.5<br>10.2<br>27.6                  | 820               | 1.1               | 0.2         | <u>.</u>        |
|        | ю `             | 309585   | 498267 | 9.0<br>0.0  | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>POT. NARROW    | 4.1<br>33.2<br>3.5<br>13.6                   | 4.3<br>9.0<br>10.4                           | <b>8</b> 20       | 1.1               | 0.2         |                 |
|        | -               | 309607   | 498273 | o. æ        | CHARA SPP.<br>Pot. Gramineus<br>Poi. Narrow                        | 0.00<br>6.4<br>6.4                           | 0.4<br>9.4<br>9.4                            | 100               | 9                 | 0.2         | o. 1            |
|        |                 | 309607   | 498273 | 5.0         | T. GRAMI   | 94.1   | 73.6   |                   | <b>.</b>          |             | o. 1            |
|        | #<br>#<br>#     | 309607 4 | 498273 | o.          | RA   | 7.00<br>6.00<br>7.00<br>7.00<br>7.00<br>7.00 | 3.5<br>0.2<br>72.0<br>12.0                   | - <del>1</del> 00 | ō.                | 0.2         | o. <del>1</del> |
|        | * 4<br>* 4<br>* | 309608   | 498276 | . C         | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS                     | 293.7<br>0.3<br>10.2                         | 4.78<br>0.2<br>8.8                           | 4 100             | <del>- 1</del> 00 | 0.1         | 0<br>8          |
|        |                 |          |        |             |  |  |  |                   |                   |             |                 |

L-105

| #<br>#<br># | 化二甲基苯甲甲基甲甲基甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲 | *************************************** | #<br>#<br>#  | P0T.                                    | NARROW  | 0.3   | 0.2                                      | 11<br>12<br>14<br>15<br>16<br>16<br>18 | ## ## ## ## ## ## ## ## ## ## ## ## ## | 10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>1 | #<br>#<br>#<br>#<br>#                             |
|-------------|--|---|--------------|---|---|---|--|--|--|---|---|
| en i        | 5 309608                                 | 498276                                  | ان<br>ت      | CHARA<br>POT.                           | CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow                           | 146.7<br>4.8<br>1.5   | 46.2<br>3.6<br>1.1                       | 4 100                                  | 100                                    | 1.0   | ය.<br>ර   |
| ம           | 309608                                   | 9                                       | 3.5<br>5.5   |   | A SPP.<br>S FLEXILIS<br>GRAMINEUS                                     | 393.0<br>0.4<br>8.5   | 135.5<br>0.2<br>5.6                      | 4 100                                  | -1<br>00<br>1                          | 0 <del>-</del>  | o. s  |
| -           |  | 498273                                  | 3.0          | CHAR<br>NAJA<br>POT.                    | CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS                              | 167.6<br>8.8<br>19.3  | 56.1<br>6.0<br>13.6                      | 3200                                   | 2600                                   | . O   | )<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>() |
| 7           | 2 309592                                 | 14 1                                    | <b>1</b> • 1 | CHARA<br>NAJAS<br>POT.                  | A SPP.<br>S FLEXILIS<br>GRAMINEUS                                     | 359.5<br>4.9<br>19.1  | 115.9<br>3.4<br>13.4                     | 3200                                   | 7                                      | o . s   |   |
|             | 309592                                   | 498273                                  | 0. E         | CHARA<br>NAJAS<br>POT.                  | CHARA SPP.<br>NAJAS FLEXILIS<br>POT. GRAMINEUS<br>POT. ZOSTERIFORM    | 231.4<br>4.8<br>9.0<br>0.0  | 70.7<br>6.3<br>0.2                       | 3200                                   | 2600                                   | ە.<br>م   | 4.0   |
| 1 01        | 309619                                   | 4                                       | i in         | P01.                                    | RICHARDSONI<br>MARROW   | 112.4<br>15.8   | 76.8                                     | 1800                                   |  | 0.3   | 0 . 0   |
| 6           | 2 309619                                 | 498280                                  | ון<br>טוו    | CHARA<br>POT.<br>POT.<br>VALLI          | CHARA SPP.<br>POT. GRAMINEUS<br>POT. RICHARDSONI<br>VALLISNERIA AMER  | 77.8<br>70.9<br>12.2<br>3.4   | 22.8<br>56.0<br>9.8                      | 1800                                   | 16                                     | e. o  | 0.  |
|             |  | 498280                                  | , ,          | 70<br>70<br>70<br>70<br>70              |   | 710<br>123.9<br>50.2  | 86.0<br>86.0<br>8.1                      | 1800                                   | 9                                      | e. o  | 0.1   |
| -           |  | 498280                                  |              | CHARA<br>NAJAS<br>POT.<br>POT.<br>VALLI | CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI POT. NARROW | TRACE<br>26.6<br>4.1<br>1.6   | 80 00 00 00 00 00 00 00 00 00 00 00 00 0 | 4200                                   | 100                                    | o<br>•  | 4.  |
| 7           | 309614                                   |   |              | CHARA<br>Pot.<br>Valli                  | CHARA SPP.<br>POT. GRAMINEUS<br>VALLISNERIA AMER                      | 148.7<br>26.5<br>7.2  | 52.3<br>17.7<br>3.8                      | 4200                                   | 100<br>100                             | 4.0   | <b>0</b> .4                                       |
| m           | 3 309614                                 | 498280                                  | ю            | CHARA<br>POT.<br>POT.<br>VALLI          | SPP.<br>GRAMINE<br>RICHARD<br>NARROW<br>ISNERIA                       | 4.0<br>4.0<br>6.0<br>8.0<br>8.0<br>8.0<br>6.0<br>6.0<br>6.0<br>7.0<br>8.0<br>8.0<br>8.0 | 37.2<br>20.8<br>3.2<br>7.3               | 4200                                   | <del>-</del><br>00-                    | 0<br>4.   | 4.  |

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE \* LESS THAN 0.001 G/M2

1

| RIVER ISLAND      | ISLAND  | BLOCK<br>NO. | REPLICATE LO<br>NO. COORD<br>UPPER |          | RAN<br>INATES<br>LOWER                            | 0EPTH<br>(FT.) |   | MACROPHYTE<br>Taxon  | DRY WEIGHT (G/M2)  | ASH-FREE L<br>WEIGHT<br>(G/M2)                  | LIGHT (FOOT | CANDLES)                              | CURRENT (F1 | F./SEC.)<br>BOTTOM                    |
|-------------------|---------|--------------|------------------------------------|----------|---|----------------|---|--|--|---|-------------|---------------------------------------|-------------|---------------------------------------|
| ST. CLAIR RUSSELL | RUSSELL | -            | -                                  | 1 309952 | 498653  | 11.0           | CHARA<br>POT                            | SPP.<br>20STERIFORM<br>NARROW                                    | 4 42.5<br>1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3                                | 17.2<br>0.9<br>64.1                             | 530         | #<br>#<br>#<br>#<br>#<br>#<br>#       | 2.0         | # # # # # # # # # # # # # # # # # # # |
|                   |         |              | 7                                  | 309952   | 498653  | 11.0           | P07                                     |  | 109.1  | 88.2  | 530         | 9                                     | 2.0         | # # # # # # # # # # # # # # # # # # # |
|                   |         | #<br>#<br>#  | :                                  | 309952   |   | 11.0           | P0T.                                    | NARROW   | 87.9   | 68.8  | 530         | 9                                     | 2.0         |                                       |
|                   |         | a            | - 1                                | 309943   | 7   | O<br>6         | CHARA<br>POT.                           | SPP.   | 553.0<br>217.3   | 381.4<br>169.6                                  | 260         |                                       |             | 0.2                                   |
|                   |         |              | 6                                  | 2 309943 | 498653  | 0.<br>0        | CHARA<br>POT.                           | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW                      | 220.3<br>100.0<br>56.0   | 63.2<br>66.2<br>44.1                            | 260         | # 9 P                                 | # (7)       | 0.2                                   |
|                   |         |              | 6                                  | 309943   | 498653  | 0. <b>6</b>    | P07<br>- T07                            | OT. GRAMINEUS<br>OT. NARROW                                      | 2.5  | 170.9   | 260         | 16                                    | 1.3         | 0.2                                   |
|                   |         |              |                                    |          | 498658  | 60<br>O        | ELODEA<br>Pot. Ri                       | A CANADENS<br>RICHARDSONI  | 28.6<br>643.4  | 15.2  | 1500        | # # # # # # # # # # # # # # # # # # # | Ø. 0        | 0.2                                   |
|                   |         |              | 7                                  | l #      | 498658  | o.             | CHARA<br>POT.                           | CHARA SPP.<br>POT. RICHARDSONI<br>POT. NARROW                    | 2.9<br>324.5<br>10.4   | 1.2<br>268.0<br>8.2                             | 1500        |                                       |             | 0.2                                   |
|                   |         |              | 6<br>6                             | 30000    | 498658  | 0.80           | CHARA S<br>ELODEA<br>POT. RI<br>POT. NA | CHARA SPP.<br>ELODEA CANADENS<br>POT. RICHARDSONI<br>POT. NARROW | 0.3<br>4.0<br>89.8<br>72.5   | 0.00<br>- 0.00<br>- 0.00<br>- 0.00              | 1500        | 20                                    | o .<br>ت    | 0.2                                   |
|                   |         |              | 4                                  | 4 309968 | 498662  | 7.0            | CHARA<br>ELODE/<br>POT. (<br>POT. )     | CHARA SPP.<br>ELODEA CANADENS<br>POT. GRAMINEUS<br>POT. NARROW   | 22 88 7<br>20 7 88 7<br>20 7 8 8 7<br>20 7 8 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 | 4. 4. 4. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. | 1200        | រភ<br>ភ                               | 0.7         | O. 4                                  |
|                   |         |              | ທ                                  | 309968   | 498662  | 7.0            | CHARA<br>POT. (<br>POT. )               | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW<br>VALLISNERIA AMER  | 139.3<br>294.3<br>40.2<br>2.2  | 217.0<br>217.0<br>31.9                          | 1200        | ម                                     | 0.7         | 0.0                                   |
|                   |         | ,            | ;                                  | 309968   | 498662  | 7.0            | CHARA<br>POT. (POT. N                   | CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW<br>VALLISNERIA AMER  | 181.6<br>165.0<br>14.0<br>1.9  | 50.7<br>106.2<br>10.9<br>1.0                    | 1200        | ន                                     | 0.7         |                                       |
|                   |         | 1            |                                    | 300056   | 1 4 9 8 6 5 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 6              | CHARA<br>ELODEA<br>POT R<br>POT N       | SPP. SPP. A CANAD SICHARD MARROW                                 | 0.5<br>320.3<br>19.1   | 0.2<br>0.4<br>276.9<br>15.7                     | 1800        |                                       | 4.          | 0.                                    |
|                   |         |              | 8                                  | 309956   | 498654  | 0.6            | CHARA                                   | SPP.   | 9.S  | 1.3   | 1800        | 4                                     | 0.4         | 0.1                                   |

|     | M<br>M<br>M<br>M<br>M | <br>       | 10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>1 | H<br>H<br>H    | ELODEA<br>POT. R<br>POT. N   | EA CANADENS<br>RICHARDSONI<br>NARROW | 5.9<br>70.7<br>54.8    | 3.8<br>52.7<br>46.0   |      |      |                  |                 |
|-----|-----------------------|------------|---|----------------|------------------------------|--------------------------------------|------------------------|-----------------------|------|------|------------------|-----------------|
|     |                       | 309956     | 498654  | 0.6            | MYRIO<br>POT.<br>POT.        | · 12 Z I                             | 8.4<br>262.6<br>64.7   | 6.6<br>176.5<br>51.3  | 1800 | 4    | 4.0              | 0.1             |
| IC. |                       | (6)        | 498656  | 7.0            | P01.                         | RICHARDSONI                          | 83.2                   | 63.4                  | 1000 |      | 0.2              | 0.1             |
|     | i 1                   | 309953     | 498656  | 7.0            | CHARA<br>POT.<br>POT.        | SPP.<br>RICHARDSONI<br>NARROW        | 0.9<br>73.1<br>52.9    | 0.3<br>53.2<br>41.5   | 1000 | m    | 0.2              | 0, 1            |
|     | ၉                     | 3 309953   | 498656  | 7.0            | CHARA<br>POT.<br>POT.        | SPP.<br>RICHARDSONI<br>NARROW        | TRACE<br>142.3<br>46.6 | 97.9<br>35.7          | 1000 |      | 0.2              | 0.1             |
| σ   | -                     | 1 309945   | 498655  | 7.0            | CHARA<br>POT.<br>POT.        | SPP.<br>Gramineus<br>Narrow          | 3.1<br>381.7<br>87.5   | 1.0<br>317.2<br>70.9  | 1300 |      | ø. 0             | 0.2             |
|     | 7                     | 309945     | 1986  | 7.0            | P01<br>- T09<br>             | GRAMINEUS<br>Narrow                  | 167.5<br>95.6          | 120.9<br>73.2         | 1300 | 10   | ø. o             | 0.2             |
|     | 6                     | 309945     | 498655  | 7.0            | P0T .                        | GRAMINEUS<br>NARROW                  | 163.0<br>42.5          | 124.5<br>34.5         | 1300 | 10   | <b>8</b> .0      | 0.2             |
| ۲   | (                     | 309967     | 498663  | 7.0            | CHARA<br>POT.<br>POT.        |                                      | 23.3<br>165.0<br>60.2  | 7.0<br>123.7<br>49.4  | 1300 | 36   | <b>8</b> 0.      |                 |
|     | 2                     | 309967     | 498663  | 7.0            | CHARA<br>POT.<br>POT.        |                                      | 53.0<br>194.6<br>62.1  | 15.7<br>137.5<br>50.7 | 1300 | 36   | 80 · O           | 0. <del>1</del> |
|     |                       | 3 309967 4 | 498663  | 7.0            | CHARA<br>POT.<br>POT.        | · UZ                                 | 359.2<br>131.6<br>71.8 | 230.9<br>96.7<br>58.1 | 1300 | 36   | <b>80</b> .      | 0.1             |
| 60  |                       | 309962     | 498664  | 0.<br>7        | ELODEA<br>Pot. GR<br>Pot. NA | A CANADENS<br>GRAMINEUS<br>NARROW    | 0.9<br>195.8<br>173.1  | 0.7<br>152.0<br>145.6 | 2500 | 1100 | 0.7              | 0.2             |
|     | 7                     | 309962     | 498664  | 0.4            | ELODEA<br>POT. GF            | A CANADENS<br>GRAMINEUS<br>NARROW    | 3.7<br>283.3<br>376.1  | 2.7<br>253.1<br>344.5 | 2500 | 1100 | 0.7              | 0.2             |
|     | <b>n</b>              | 309962     | 498664  | <b>4</b> .0    | POT.                         | GRAMINEUS<br>NARROW                  | 162.3<br>216.5         | 115.0<br>175.6        | 2500 | 1100 | 0.7              | 0.2             |
|     | # ·                   | 309965     | 498662  | <b>4</b><br>0  | CHARA<br>POT.                | SPP.                                 | 630.7<br>32.1          | 315.6<br>23.7         | 2500 | 1200 | <b>89</b> .0     | 0.2             |
|     |                       | 308865     | 498662  | <b>4</b><br>0. | 24                           | S FLEXILIS<br>GRAMINEUS              | 305.7<br>0.7<br>14.6   | 96.<br>0.4<br>10.4    | 2500 | 1200 | <b>s</b> o.<br>O | 0.2             |
|     | g                     | 309965     | 498662  | 0.4            | CHARA                        | SPI                                  | 468.5<br>0.5           | 163.5                 | 2500 | 1200 | <b>8</b> .0      | 0.2             |

|   |          |            | 1              | P01.                  | POT . NARROW  | 6.0                    | o.s                   |                           |      |   |   |
|---|----------|------------|----------------|-----------------------|---|------------------------|-----------------------|---------------------------|------|---|---|
| - | 309956   |            | 0. <b>6</b>    | CHAR<br>POT.          | 498663 5.0 CHARA SPP.<br>POT. GRAMINEUS<br>POT. NARROW      | 48.7<br>227.9<br>102.3 | 15.5<br>155.6<br>84.8 | 15.5 2400<br>55.6<br>84.8 | 1000 | 15.5 2400 1000 1.2 0.6<br>155.6<br>84.8 | H 9.                                      |
| 8 | 2 309956 |            | o. 8           | CHAR<br>POT.<br>POT.  | CHARA SPP. POT. GRAMINEUS POT. NARROW                       | 77.4<br>559.0<br>67.1  | 26.2<br>512.4<br>55.5 | 2400                      | 1000 | 26.2 2400 1000 1.2 0.6<br>512.4 55.5    | 9.0                                       |
| ю | 3 309956 |            | 0.<br>0.       | P01.                  | 498663 5.0 POT. GRAMINEUS<br>POT. NARROW                    | 159.6                  | 113.6                 | 113.6 2400<br>64.1        | 1000 | 113.6 2400 1000 1.2 0.6<br>64.1         | . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6 . 6   |
| 4 | 4 309951 |            | <b>4</b> .0    | CHAR/<br>POT.         | 498661 4.0 CHARA SPP.<br>Pot. Gramineus<br>Pot. Narrow      | 763.3<br>13.0<br>0.7   | 504.9<br>8.9<br>0.4.0 | 2500                      | 1000 | 504.9 2500 1000 1.3 0.6<br>8.9 0.4      | 9.0                                       |
| ស | 5 309951 |            | <b>4</b><br>0. | CHAR<br>POT.<br>VALLI | 498661 4.0 CHARA SPP.<br>POT. GRAMINEUS<br>VALLISNERIA AMER | 212.5<br>9.4           | 80.5<br>6.6<br>1.0    | 2500                      | 1000 | 2500 1000 1.3 0.6                       | # 9 · 0 · 0 · 0 · 0 · 0 · 0 · 0 · 0 · 0 · |
| 9 | 6 309951 | 498661 4.0 | <b>4</b> .0    | CHAR                  | 498661 4.0 CHARA SPP.                                       | 369.8<br>509.8         | 213.2                 | 2500                      | 1000 | 4.3                                     | 9.0                                       |

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND BLOCK RE<br>NO. | ISLAND | BLOCK<br>NO.                     | REPLICATE NO.            | <b>→</b> * | LORAN<br>COORDINATES<br>PPER LOWER | ОЕРТН<br>(FT.) | MACROPHYTE<br>TAXON   | DRY WEIGHT (G/M2)              | _                          | LIGHT (FOOT                              |   | CURRENT (FT                           | ./SEC.)                                     |
|------------------------------|--------|----------------------------------|--------------------------|------------|------------------------------------|----------------|---|--------------------------------|----------------------------|--|---|---------------------------------------|---|
| DETROIT                      | BELLE  | -                                | - 11                     | 1 312759   | 6 1                                | 0.1            | VALLISNERIA AMER  | 61.8                           | 35.6                       | 300                                      | 16  | 0.5                                   | 0.1   |
|                              |        |                                  | 8 8<br>8 8<br>8 8        | 2 312759 4 | 9 499951                           | 0.11           | GRAM<br>ISNER<br>MUS U  | 7.8<br>63.1<br>2.4             | 92.8<br>1.6                | 300                                      | 10 10 10 10 10 10 10 10 10 10 10 10 10 1  |                                       | 0.1   |
|                              |        | 81<br>81<br>84<br>81<br>11<br>34 | (*)                      | 3 312759   | 9 499951                           | 0<br>-         | SNE SNE   | TRACE<br>TRACE<br>13.6<br>44.6 | 11.2                       | 300                                      | 11  |                                       | . O . T . B . B . B . B . B . B . B . B . B |
|                              |        | 5                                |                          | 312768     | 3 499959<br>8 499959               | 0.8            | VALLISNERIA AMER  | 72.8                           | 40.6                       | 620                                      | B   | 0.2                                   | . O . t                                     |
|                              |        |                                  | CA 40                    | 2 312768   | 3 499959                           | 0.88           | ZOSTERI   | 6,6<br>22.6                    | 5.1                        | 620                                      |   | H .                                   | и<br>в в<br>о . т<br>и                      |
|                              |        | #<br>#<br>#<br>#                 | 3 312768 4<br>3 312768 4 | 312768     | 3 499959                           | 8.0            | AIS   | 102.0                          | 61.8                       | 620                                      | # 06<br># 06                              | 0.2                                   | 0.1   |
|                              |        | е                                | - 4                      | 1 312780 4 | 499965                             | o<br>o         | RICHARDS<br>ISNERIA A   | 58.7<br>82.0                   | 43.5<br>52.3               | 006                                      |   | N N N N N N N N N N N N N N N N N N N | 0 . 1                                       |
|                              |        |                                  | 1                        | 312780 4   | 499965                             | O .            | POT. CRISPUS<br>POT. RICHARDSONI<br>VALLISNERIA AMER            | TRACE<br>118.2<br>20.8         | 80.3                       | 14 H H H H H H H H H H H H H H H H H H H | 18 10 00 00 00 00 00 00 00 00 00 00 00 00 | 0.3                                   | 0.1   |
|                              |        | 10<br>10<br>10<br>10<br>10<br>10 | H                        | r 1        | 7 499965                           | o.             | POT. CRISPUS<br>POT. RICHARDSONI<br>VALLISNERIA AMER            | 2.3<br>104.2<br>47.6           | 1.6<br>67.4<br>29.5        | 006                                      |   | # # # # # # # # # # # # # # # # # # # | 0 . 1                                       |
|                              |        | 4                                |                          | 1 312789   | 499974                             | o<br>o         | CHARA SPP.<br>NAJAS FLEXILIS<br>VALLISNERIA AMER                | 15.2<br>19.1<br>26.4           | 4.8.<br>13.3               | 1300                                     |   | H (O)                                 | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4       |
|                              | ·      |                                  | 2                        | 2 312789 4 | 499974                             | O.<br>60       | CHARA SPP.<br>Najas Flexilis<br>Pot. Narrow<br>Vallisneria amer | 35.6<br>79.0<br>9.7            | 64.1<br>6.8<br>6.8<br>13.3 | 1300                                     | 350                                       | # # # # # # # # -                     | 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6     |
|                              |        | 01<br>90<br>91<br>81<br>81<br>81 |                          | 312789 4   | 499974                             | 0.6            | CHARA SPP.  VALLISNERIA AMER                                    | 19.0<br>36.3                   | 22.4                       | 1300                                     | 350                                       |                                       | H O   |
|                              |        | ស                                | - 1                      | 1 312804 4 | 499983                             | 0.80           | RICHARDSO<br>SNERIA AM  | 8.6<br>20.7                    | 6.7<br>14.6                | 1500                                     | 220                                       | 0.5                                   |   |
|                              |        |                                  | 7                        | 2 312804 4 | 499983                             | <b>8</b> .0    | ELODEA CANADENS POT. RICHARDSONI VALLISNERIA AMER               | 1.9<br>24.7<br>43.7            | 1.2<br>19.1<br>28.7        | 1500                                     | 220                                       |                                       | 11<br>00<br>01<br>01<br>01<br>01<br>01      |
|                              |        | #<br>H<br>H                      | 3 312804 4               | 312804     | 499983                             | 0.88           | MYRIO, SPICATUM<br>POT. RICHARDSONI<br>VALLISNERIA AMER         | 3.7<br>12.0<br>43.2            | 4.00 S H                   | 1500                                     | 220                                       | 10 H                                  |   |

| ဖ  | - A | 312810 4   | 499986 | 11.0   | NAJAS FLEXILIS<br>VALLISNERIA AMER  | 4.4                                     | 24.3                          | 2600 | 150  | 2.0             | 4.1                                   |
|----|-----|------------|--------|--------|---|---|-------------------------------|------|------|-----------------|---------------------------------------|
|    | 2   | 312        | 499986 | 11.0   | VALL I SNERIA AMER  |   | 25.2                          | 2600 | 150  | 2.0             | # 4                                   |
|    | e   | 3 312810 4 |        | = ;    | POT. RICHARDSONI<br>VALLISNERIA AMER  | +. 8<br>4.                              | 4.4                           | 2600 | 150  | 2.0             | 4. 4 H                                |
| ٢  | -   | 312852 4   | اق ا   | 4<br>ت | NAJAS FLEXILIS<br>NITELLA HYALÍNA<br>POT. NARROW<br>VALLISNERIA AMER        | TRACE<br>188.5<br>TRACE<br>TRACE        | 65<br>6                       | 3000 | 280  |                 | M M M M M M M M M M M M M M M M M M M |
|    | 8   | 312852 4   | 499996 | 4.5    | CHARA SPP.<br>VALLISNERIA AMER  | 195.6<br>1.4                            | 76.4                          | 3000 | 280  | 0.4             |                                       |
|    | m   | 3 312852 4 | 499996 | 4      |   | 198.1<br>TRACE<br>17.1<br>10.9          | 65 . 4<br>4 . 2 . 2<br>30 . 3 | 000E | 280  | <del>.</del>    | o.<br>o                               |
|    | 4   | 312858 4   | 499997 | 7.0    | MYRID. SPICATUM<br>POT. RICHARDSONI<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | 2 2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 36.8<br>36.6<br>5.2           | 4000 | 190  | 0<br>1          | 0.0                                   |
|    | ID. | 312858 4   | 499997 | 7.0    | MYRID. SPICATUM<br>POT. RICHARDSONI<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | 7.3<br>13.7<br>74.0                     | 4.0.8<br>40.8<br>9.1.8<br>5.5 | 4000 | 190  | 0<br>1          | 0.0                                   |
|    | φ   | 312858 4   | ا ق    | 7.0    | .~~~  | TRACE<br>10.7<br>14.3<br>68.5           | 88 88<br>9. 10. 10.           | 4000 | 061  | •<br>•          | 0.0                                   |
| 60 | -   | 312845     | 499994 | 6.0    | MYRIO. SPICATUM<br>NITELLOP. OBTUSA   | 9.1                                     | 6.3<br>95.7                   | 3500 | 1000 | 0.2             | 0.0                                   |
|    | 2   | 312845     | ו פו   | 6.0    | MYRIO. SPICATUM<br>NITELLOP. OBTUSA   | TRACE<br>181.5                          | 72.5                          | 3500 | 1000 | 0.2             | 0<br>-                                |
|    | ;   | , ,        | 499994 | e.o    | MYRIO. SPICATUM<br>NITELLOP. OBTUSA   | 6.9<br>191.5                            | 5.6<br>68.4                   | 3500 | 1000 | 0.2             |                                       |
|    | 1 1 | 312840 4   | 499995 | 7.     | MYRIO. SPICATUM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                     | 361.2<br>22.0<br>76.4                   | 175.2<br>13.1<br>35.2         | 4000 | 620  | o. <del>1</del> | o.<br>o                               |
|    | ស   | 5 312840 4 | 499995 | 7.     | MYRIO. SPICATUM<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA                     | 310.0<br>5.2<br>10.2                    | 232.0<br>2.2<br>4.7           | 4000 | 620  | 0.1             | o.<br>o                               |
|    | φ   | 312840 4   | 499995 | 7.0    | MYRIO. SPICATUM<br>POT. RICHARDSONI<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA | 06.<br>4.9.9.<br>7.588.                 | 78.8<br>6.4<br>5.7            | 4000 |      | o<br>-          | o.<br>o                               |
| 0  |     | 0 112833 4 | 499996 | 7.0    | MYRIO. SPICATUM   | 110.5                                   | 77.0                          | 4500 | 360  | 0.3             | 0.1                                   |

|                                      | # <del>-</del>                   | # <b>-</b> -   | #<br>#<br>#      |                                |                                | 2   | 8  | ú   | 8   | 2  | 7  |
|--------------------------------------|----------------------------------|--|------------------|--------------------------------|--------------------------------|---|--|---|---|--|--|
|                                      | 0                                | 0  | 0.               | Ö                              | Ö                              | 0.2   | ó  | Ö   | Ö   | Ö  | 0.2  |
|                                      | e. 0                             | e.<br>O  | 4.0              | 4.0                            |                                |   | o. 3   | ღ<br>0  | 1.3<br>E  | <del>.</del>                                 | <br>                                       |
|                                      | 360                              | 360  | 8                | 200                            | 500                            | <u>§</u>  | <u>8</u>   | <del>0</del>  | 400   | 400  | 8  |
|                                      | Ř                                | Ř  | 1500             | 1500                           | ) <u>e</u>                     | -   | <del>.</del><br>8  | <del>.</del><br>8   | 4   | 4  | 1400                                       |
|                                      | 4500                             | 4500   | <del>0</del> 004 | 4000                           | 4<br>000<br>000                | 2600  | 2600   | . <b>2600</b>   | 3900  | 3900   | 3900                                       |
| 2.7                                  | 27.2<br>16.2<br>1.3              | 3.6<br>35.7<br>0.9   | 65.6<br>9.2      | 80.0<br>3.3                    | 31.6<br>30.7                   | 26.3<br>7.2<br>0.6<br>39.8  | 22.5<br>22.5<br>3.5<br>5.7<br>5.0<br>5.0<br>5.0<br>5.0<br>5.0<br>5.0<br>5.0<br>5.0<br>5.0<br>5.0 | 8 0 4 0<br>8 0 4 0<br>8 0 4 0<br>8 0 7 0 0<br>8 0 0 0                                       | 35.4<br>35.4<br>35.4<br>36.6<br>6.6                               | 13.1<br>1.6<br>11.6<br>3.4<br>6.5            | 2.1<br>59.0<br>1.9                         |
| 0.00<br>4.                           | 9.66.<br>9.42.<br>9.22.<br>9.23. | 10.4<br>47.7<br>TRACE<br>2.2<br>3.6  | 157.9            | 234.1<br>8.6                   | 75.1<br>72.9                   |   | 61.8<br>61.8<br>27.9<br>1.8<br>2.0<br>2.0  | 22.8<br>17.8<br>20.1<br>3.2   | 240<br>440<br>98.00<br>98.00<br>99.00                             | 6.04<br>8.00<br>1.00<br>1.00<br>1.00<br>1.00 | 85.7<br>3.4                                |
| VALLISNERIA AMER<br>NITELLOP, OBTUSA | ICAT<br>ARDS<br>IA A             | CHARA SPP.<br>MYRIO. SPICATUM<br>POT. NARROW<br>VALLISNERIA AMER<br>NITELLOP. OBTUSA |                  | CHARA SPP.<br>NITELLOP. OBTUSA | CHARA SPP.<br>NITELLOP. OBTUSA | CHARA SPP. NAJAS FLEXILIS NITELLA HYALINA POT. GRAMINEUS VALLISNERIA AMER | CHARA SPP. NAJAS FLEXILIS POT. NODOSUS POT. NARROW VALLISNERIA AMER NITELLOP. OBTUSA             | CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA | CHARA SPP. CHARA SPP. POT. GRAMINEUS POT. NARROW VALLISNERIA AMER | ILLI<br>RDS<br>W<br>A A                      | CHARA SPP. NAJAS FLEXILIS VALLISNERIA AMER |
|                                      | 7.0                              | 7.0  | 5.               | ت.<br>ت                        | ر<br>ب                         | 0.  | က်<br>ဝ  | ru<br>O   | ເບ<br>ເກ  | ru<br>ru                                     | ห<br>ห เก<br>ห เก                          |
|                                      | 499996                           | 499996   | 499992           | 499992                         | 499992                         | 499989  | 4 9 9 9 8 9 9 8 9 9 8 9 9 8 9 9 9 8 9                      | 89989<br>89   | 1   | 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9      | 499993                                     |
|                                      | 312833 499996                    | 312833 49  | 4 312833 499992  | 312833 499992                  | 6 312833 4                     | 10 1 312821 49  | 2 312821 49  | 3 312821 4  | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4                             |  | **************************************     |
|                                      | ч                                | e  | 4                | B)                             |                                | -   | 7  | m   | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4                             |  | #<br>#<br># 69                             |
|                                      |                                  |  |                  |                                |                                | ç   |  |   |   |  |  |

18.1

(

L-113

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

HENNED IN

DETROIT

RIVER

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE \* LESS THAN 0.001 G/M2

13.0 1500 350 0.1 0.0 2 314094 500702 7.0 CHARA SPP. 2.2 0.7 1500 330 0.1 0.0 ASH-FREE LIGHT(FOOT CANDLES) CURRENT(FT./SEC.) 0.0 0.0 0.0 <u>.</u> ٥. 0.0 0.0 0.0 <u>-</u> 0 <del>-</del> 0.0 0.0 0.0 0.5 -٠ . 0.5 ÷. SURFACE 0.5 0.5 ٥. 0.3 0.3 0.3 0.5 0.5 0.5 <u>-</u> ٥. <u>-</u> <del>-</del>. ٥. ٠. 0.5 0.5 SURFACE BOTTOM 140 150 150 150 280 280 280 350 350 40 40 320 320 320 540 330 5 5 540 44.0 1500 57.7 1500 3500 2400 1500 1500 1500 1500 1500 1600 1500 3500 2400 1600 1600 1800 00 3500 2400 1800 41.0 1500 75.3 20.5 42.5 28.3 41.8 60.4 46.9 50.9 52.5 13.7 55.3 76.5 59.2 49.2 102.5 23.7 (G/M2) WE I GHT DRY WEIGHT 79.5 53.0 52.6 74.9 77.8 68.0 105.4 121.2 24.2 152.0 119.9 8.3 6.0 14.9 97.8 171.0 182.0 35.6 86.7 33.9 116.5 83.8 214.6 (G/M2) 的代价和银矿非远时加加县化铁机保持的经济的经济和公司的特别提供和银铁和保险物质的特别和最高的最高的最高的数据的 314088 500682 8.0 VALLISNERIA AMER 314076 500684 5.5 VALLISNERIA AMER 314088 500682 8.0 VALLISNERIA AMER 314088 500682 8.0 VALLISNERIA AMER 314076 500692 6.0 VALLISNERIA AMER 314076 500692 6.0 VALLISNERIA AMER 314066 500670 6.0 VALLISNERIA AMER 314066 500670 6.0 VALLISNERIA AMER 314066 500676 6.5 VALLISNERIA AMER 314066 500676 6.5 VALLISNERIA AMER 314066 500676 6.5 VALLISNERIA AMER 314076 500684 5.5 VALLISNERIA AMER 314076 500684 5.5 VALLISNERIA AMER 314076 500692 6.0 VALLISNERIA AMER 314066 500670 6.0 VALLISNERIA AMER 314062 500675 9.0 PDT. RICHARDSONI 314062 500675 9.0 PDT. RICHARDSONI 314094 500702 7.0 VALLISNERIA AMER 314062 500675 9.0 PDT. RICHARDSONI VALLISNERIA AMER VALLISNERIA AMER POT. RICHARDSONI VALLISNERIA AMER POT. RICHARDSONI VALLISNERIA AMER VALLISNERIA AMER MACROPHYTE CHARA SPP. 9.0 5.0 5.0 LOWER 314082 500696 314082 500696 314082 500696 COURDINATES UPPER REPLICATE n n ~ ISLAND BLOCK N 9

|                            | 14<br>14<br>10<br>11 | 11<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61<br>61 | 49<br>10<br>11<br>11<br>11<br>11 | #<br>#<br>#<br>#<br># | VALLISNERIA AMER                                       | 97.5                                  | 56.9                | 11<br>14<br>14<br>14<br>16<br>18<br>18<br>18 | 6<br>6<br>6<br>7<br>7<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8 |         | #<br>#<br>#<br># |
|----------------------------|----------------------|--|----------------------------------|-----------------------|--|---------------------------------------|---------------------|--|--|---------|------------------|
| 71<br>61<br>61<br>71<br>81 | (C) III              | 314094   | 500702                           | 7.0                   | CHARA SPP. MYRIO. SPICATUM VALLISNERIA AMER            | TRACE<br>1.4<br>81.0                  | 54.8                | 1500   | 330  | 0.1     | 0.0              |
| 60                         | - :                  | 1 314078   | 500701                           | 0.9                   | MYRIO. SPICATUM<br>VALLISNERIA AMER                    | 41.8<br>180.0                         | 24.8<br>92.7        | 1500   | 51   | 0.3     | 0.0              |
|                            | 2                    | 2 314078   | 500701                           | 6.0                   |  | 224.2                                 | 109.2               | 1500   | 51   | 0,3     | 0.0              |
|                            | 6                    | 314078   |                                  | 6.0                   |  | 8.08<br>8.8                           | 3.7<br>1.0<br>47.8  | 1500   | 51   | 6.0     | 0.0              |
|                            |                      | 314078   | 500702                           | <b>9</b> .0           | MYRID. SPICATUM<br>VALLISNERIA AMER                    | 147.1                                 | 78.5                | 1300   | 25   | 0.2     | 0.0              |
|                            | ı<br>D               | 314078   | 500702                           | o.<br>9               | MYRIG. SPICATUM<br>VALLISNERIA AMER                    | 214.9                                 | 159.98              | 1300   | 25 m m m m m m m m m m m m m m m m m m m   | 0.2     | 0.0              |
|                            | :                    | 314078   | 500702                           | 6.0                   | MYRIO. SPICATUM<br>VALLISNERIA AMER                    | 193.8<br>30.2                         | 121.7<br>16.4       | 1300   | 25   | 0.2     | 0.0              |
|                            | 7                    | 7 314078   |                                  | o.<br>6               | NAJAS FLEXILIS<br>POT. RICHARDSONI<br>VALLISNERIA AMER | 2.7<br>23.9<br>98.2                   | 1.8<br>17.1<br>46.1 | 7 10   | 1.00   | 0<br>4. | 0.2              |
|                            | <b>6</b> 0           | 314078   | 500716                           | 0.9                   | POT. RICHARDSONI<br>VALLISNERIA AMER                   | 32.4                                  | 22.6                | 7.10   | 9.1  | 4.0     | 0.2              |
|                            |                      | 314078   | 500716                           | 6.0                   | POT. RICHARDSONI VALLISNERIA AMER                      | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 39.4<br>2.5         | 7.10   | H CO   1   | 0.4     | 0.2              |
| Ø                          |                      | 1 314087   | 500704                           | 5.0                   | VALLISNERIA AMER                                       | 10.1                                  | 12.0                | 1200   | 32   | 0.2     | 0.0              |
|                            | 2                    | 314087   |                                  | <b>ي</b><br>0.        |  | 12.3<br>155.2                         | 3.5                 | 1200   | 35   | 0.2     | 0.0              |
|                            | e e                  | 314087   | , 6, ,                           | ю<br>О                | CHARA SPP.<br>POT. RICHARDSONI<br>VALLISNERIA AMER     | 2.2<br>5.1<br>47.6                    | 0.5<br>3.8<br>24.1  | 1200   | 35   | 0.2     | 0.0              |
| ţ                          |                      | 314100   | 500715                           | 6.5                   | VALLISNERIA AMER                                       | 239.5                                 | 86.8                | 1300   | H H H H H H H H H H H H H H H H H H H  | 0.1     | 0.1              |
|                            | 2                    | 314100 8   | 500715                           | 0 H A                 | VALLISNERIA AMER                                       | 116.7                                 | 45.6                | 1300   | H (6.5)<br>H (7.1)<br>H (8.1)<br>H (8.1)   | 0.1     | 0.1              |
| *****                      | ) # <del></del>      | 314088 E   | 500719                           | 6.5                   | VALLISNERIA  | 118.2                                 | 62.3                | 1400   | 290  | 0.2     | 0.0              |
|                            | 3                    | 314088   | 5007 19                          | # 9 I                 | CHARA SPP. NAJAS FLEXILIS                              | TRACE<br>5.6<br>123.5                 | 63.6                | 1400   | 290  | 0.2     |                  |
|                            | c                    | 314088   | 314088 500719                    | e<br>e                | CHARA SPP. NITELLA HYALINA VALLISNERIA AMER            | 11.6<br>0.4<br>62.0                   | 3.7<br>0.2<br>29.7  | 1400   | 290  | 0.2     | 0.0              |
|                            | 4                    | 4 314088 5   | 500719                           | 9                     | NAJAS FLEXILIS   | 46.6                                  | 30.4                | ١Ŏ   | 290  |         | 0.0              |

ħ,

|    | 1<br>1<br>2 | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0 |         |          | NITELLA HYALINA<br>VALLISNERIA AMER                                  | TRACE<br>35.6                                 | 20.3               |  |  |         |     |
|----|-------------|---|---------|----------|--|---|--------------------|--|--|---------|-----|
|    | រំស         | 5 314088  | 500719  |          | CHARA SPP.<br>NAJAS FLEXILIS<br>VALLISNERIA AMER                     | 4 + 1 - 8 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 | 0.4<br>7.5<br>25.2 | 14 00 14 14 14 14 14 14 14 14 14 14 14 14 14 | 2000 H H H H H H H H H H H H H H H H H H |         | 0.0 |
|    | ဖ           | 314088  | 5007 19 | က်<br>က  | NAJAS FLEXILIS<br>NITELLA HYALINA<br>POT. NARROW<br>VALLISNERIA AMER | 10.3<br>TRACE<br>3.2<br>131.5                 | 5.8<br>65.1        | 1400   | 290                                      |         | 0.0 |
|    | 7           | 7 314091  | 500716  | <b>o</b> | POT. RICHARDSONI<br>VALLISNERIA AMER                                 | 56.6  | 26.6               | 000<br>000                                   |  |         |     |
|    | . co        | 8 314091 500716   | 5007 16 | O. 6     | POT. RICHARDSONI<br>VALLISNERIA AMER                                 | 57.4  | 41.3               | 000  |  | 8.O     | 0.2 |
| 1  | 0           | 9 314091  | 500716  | 0.6      | NAJAS FLEXILIS<br>POT. RICHARDSONI<br>VALLISNERIA AMER               | TRACE<br>111.6<br>13.3                        | 80.6<br>8.2        | 1000   |  | ъ.<br>О | 0.2 |
| 12 |             | 12 1 314095   | 500722  | و.<br>9  | VALLISNERIA AMER   | 93.0  | 54.2               | 1500   | 9  | 0.1     | 0.0 |
|    | 2           | 2 314095  | 500722  | O. 9     | VALLISNERIA AMER   | 127.7   | 67.1               | 1500   | 9  | 0.1     | 0.0 |
| 1  | 6           | 3 314095 500722   | 500722  | 9<br>9   | VALLISNERIA AMER   | 153.5   | 75.9               | 1500   | 9  | 0.1     | 0.0 |
| 13 |             | 1 314097  | 500727  |          |  | 60.8  | 32.4               | 1100   | 140                                      |         | 0.3 |
|    | 2           | 2 314097  | 500727  | 10.0     | i - i  | 13.1  | ග<br>ග             | - 100<br>001                                 | 140                                      | ٠       | 0.3 |
|    | 6           | 3 314097 500727   | 500727  | 0.<br>0. | VALLISNERIA AMER   | 56.5  | 37.4               | <del>1</del><br>8                            | 140                                      | 4.4     | 0.3 |
| 4  | -           | 1 314109  | 500736  | 0.6      | i - i  | 6.0   | 3.4                | 1400   | 89<br>52                                 | o.3     | 0.3 |
|    | 7           | 2 314109  | 500736  | o.       | 1 1  | 121.6   | 62.7               | 1400   | 80<br>50                                 | o.3     | 0.3 |
|    | 3           | 314109  | 500736  | 0.6      | VALLISNERIA AMER   | - · 6   | 80.00              | 400  | 95                                       | O.3     | 0.3 |

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

Ĺ

|  | 00978 7.5 POT. NARROW 11.9 4.5 2800 32 0.6 0.6 0.6 | 00978 7.5 VALLISNERIA AMER 179.3 87.4 2800 32 0.6 | 00978 7.5 POT. NARROW 55.2<br>VALLISNERIA AMER 168.6 | 00975 8.0 VALLISNERIA AMER 350.3 127.2 2800 4 0.7 | 00975 8.0 VALLISNERIA AMER 126.6 70.6 2800 4 0.7 | 00975 8.0 VALLISNERIA AMER 210.0 103.3 2800 4 0.7 | 00973 7.5 POT. NODOSUS 119.8 82.8 2600 250 0.5 | 00973 7.5 HETERANTHERA DUB 8.4 5.8 2600 2<br>POT. NODOSUS 103.3 76.3 | 100973 7.5 POT. NODOSUS 126.3 83.2 2600 250 0.5 | 500972 10.0 MYRID. SPICATUM 144.6 93.0 2100 37 0.8 0.1<br>VALLISNERIA AMER 5.9 2.5 | 00972 10.0 M | 500972 10.0 MYRIO, SPICATUM 199.2 117.9 2100 37 0.8 0.1 | 00985 8.0 VALLISNERIA AMER 192.4 83.4 2800 25 0.4 | 00985 8.0 VALLISNERIA AMER 140.0 63.1 2800 25 0.4 | 00985 8.0 VALLISNERIA AMER 185.8 94.7 2800 25 | OO986 4.0 HETERANTHERA DUB 292.2 195.7 3000 180 0.2<br>POT. CRISPUS 6.8 5.7 | 00986 4.0 ELODE<br>HETER<br>POT. | 00986 4.0 ELODEA CANADENS 2.6 1.5 3000 180 0.<br>HETERANTHERA DUB 327.4 280.5<br>POT. CRISPUS 20.6 18.4 | 00988 3.0 MYRID. SPICATUM 241.2 189.3 2900 | 00988 3.0 MYRID. SPICATUM 176.2 135.0 2900 150 0.2 VALLISNERIA AMER 19.0 14.2 |
|--|--|---|--|---|--|---|--|--|---|--|--------------|---|---|---|---|---|----------------------------------|---|--|---|
| REPLICATE LORA<br>NO. COORDIN<br>UPPER | 1 314223 5   | 314223 5  | 3 314223 5   | 2 1 314212 5                                      | 2 314212 5                                       | 314212  |  | 2 314205 5   | 3 314205  | 1 314189 5   | 314189       | 314189  | 314229  | 314229 5  | 3 314229 5                                    | 1 314220  | 2 314220 5                       | 3 314220 5  | 314232                                     | 2 314232  |
| LOCK RE                                |  |   |  | 2   |  |   |  |  | - 1   | 4  |              | 1   |   |   |   | y   |                                  |   | 7  |   |
| RIVER IS                               | DETROIT STONY                                      |   | •  |   |  |   |  |  |   |  |              |   |   |   |   |   |                                  |   |  |   |

|             | ო | 314232            | 314232 500988   | 3.0         | HETERANTHERA DUB<br>MYRIO, SPICATUM<br>VALLISNERIA AMER | 0.9<br>272.3<br>7.1   | 0.6<br>198.8<br>4.5   | 2900 | 150   | 0.2             | <del>-</del> |
|-------------|---|-------------------|-----------------|-------------|---|-----------------------|-----------------------|------|---|-----------------|--------------|
| 60          |   | 9 14227 5         | 314227 500991   | B           | HETERANTHERA DUB  | 267.7                 | 183.4                 | 3200 | 10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>1 | 0.1             | 0.0          |
|             | 2 | 2 314227 5        | 314227 500991   | ອ<br>.ຄ     | HETERANTHERA DUB<br>POT. CRISPUS                        | 246.4<br>52.9         | 167.7                 | 3200 | 35  | o. <del>1</del> | 0.0          |
| ;<br>;<br>; | က | 314227            | 3 314227 500991 | 3.5         | HETERANTHERA DUB<br>POT. CRISPUS                        | 230.2<br>17.7         | 152.9                 |      | 35  | o. <del>1</del> | 0.0          |
| <b>o</b>    |   | 1 314245 5        | 314245 500997   | 0.0         | MYRIO. SPICATUM<br>VALLISNERIA AMER                     | 421.0<br>2.7          | 182.9                 | 3000 | 120   | 0.3             | 0.0          |
|             | 2 | 2 314245 5        | 314245 500997   | رة<br>0.    | HETERANTHERA DUB<br>MYRIG. SPICATUM<br>VALLISNERIA AMER | 29.7<br>167.4<br>26.4 | 23.5<br>116.8<br>19.3 | 3000 | 120   | o. 3            | 0.3          |
|             | က | 314245            | 314245 500997   | ر<br>0. و   | HETERANTHERA DUB<br>MYRIO. SPICATUM<br>VALLISNERIA AMER | 18.9<br>251.3<br>11.5 | 15.6<br>171.4<br>8.0  | 3000 | 120   | e. o            | e. 0         |
| <b>5</b>    | - | 10 † 314239 50099 | 314239 500997   | 4<br>0      | HETERANTHERA DUB  | 139.2                 | 84.4                  | 2500 | 160   | 0.3             | 0.2          |
|             | 7 | 2 314239 50099    | 314239 500997   | <b>4</b> .0 | HETERANTHERA DUB<br>POT. CRISPUS                        | 258.3<br>16.6         | 144.5<br>10.3         | 2500 | 160   | 0.3             | 0.2          |
|             | ဗ | 3 314239 5        | 314239 500997   | <b>4</b> .0 | HETERANTHERA DUB  | 636.2                 | 402.1                 | 2500 | 160   | 0.3             | 0.2          |
|             | - | 1 314254 5010     | 314254 501003   | я.<br>О     | MYRIO. SPICATUM<br>VALLISNERIA AMER                     | 275.0<br>15.1         | 203.8<br>10.9         | 2800 | 830   | <b>8</b> .0     | 0.2          |
|             | ~ | 2 314254 5        | 314254 501003   | 8.<br>O     | MYRIO. SPICATUM<br>VALLISNERIA AMER                     | 199.9<br>10.6         | 139.6<br>7.6          | 2800 | 830   | 80. O           | 0.2          |
|             | 6 | 314254            | 314254 501003   | 5.0         | MYRIO, SPICATUM<br>VALLISNERIA AMER                     | 284.1<br>12.2         | 208.5<br>9.1          | 2800 | 830   | 8. O            | 0.2          |

APPENDIX M

Collections of Emergent Macrophytes

EMERGENT MACROPHYTE (MOMERR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA 2. TRACE = LESS THAN 0.001 G/M2

| RIVER   |                          | BLOCK<br>NO. | ISLAND BLOCK REPLICATE LOR<br>NO. NO. COORDI<br>UPPER | E LOR<br>COORDI<br>UPPER | AN<br>NATES<br>LOWER | DEPTH<br>(FT.) |              | MACROPHYTE<br>Taxon | DRY WEIGHT (G/M2) | ASH-FREE<br>WEIGHT<br>(G/M2) | LIGHT(FOOT CANDLES) | CANDLES)                                     | CURRENT(FT./SEC.) | F./SEC.) |
|---------|--------------------------|--------------|---|--------------------------|----------------------|----------------|--------------|---------------------|-------------------|------------------------------|---------------------|--|-------------------|----------|
| DETROIT | DETROIT STONY 8 4 314234 | # 60<br>#    | # # # # # # # # # # # # # # # # # # #                 | 314234                   | -                    | 2.0            | TYPHA ANGUST | TYPHA ANGUSTIFOL    | 213.4             | #<br>#<br>#<br>#<br>#        | 1700                | 16<br>10<br>10<br>10<br>11<br>11<br>11<br>11 |                   | ***      |
|         |                          |              | S.  | 5 314234                 | 500996 2.0           | 2.0            | TYPHA A      | TYPHA ANGUSTIFOL    | 230.3             |                              | 1700                |  | H<br>H            |          |
|         |                          |              | 9   | 6 314234                 | 500996               | 2.0            |              | TYPHA ANGUSTIFOL    | 263.3             |                              | 1700                |  |                   |          |
|         |                          | ç            | 10 4 314246   | 314246                   |                      | 6.5            | TYPHA A      | TYPHA ANGUSTIFOL    | 532.3             |                              | 2400                |  | O. <del>1</del>   |          |
|         |                          |              | ທ   | 5 314246                 |                      | 5.5            |              | TYPHA ANGUSTIFOL    | 487.4             |                              | 2400                |  | •                 |          |
|         |                          |              | g   | 6 314246                 |                      | -<br>.5        |              | TYPHA ANGUSTIFOL    | 783.8             |                              | 635.0 2400          |  | 0.1               |          |
|         |                          |              | 7   | 7 314249                 |                      | o.             | SPARG.       | SPARG, EURYCARP     | 114.5             |                              |                     |  | 0.2               |          |
|         |                          |              | æ   | 8 314249                 | 501007               |                | SPARG.       | 1.0 SPARG. EURYCARP | 120.3             | 64.6                         | 2500                | ,  | 0.2               |          |
|         |                          |              | a   | 9 314249                 |                      | 0.             | SPARG.       | 1.0 SPARG. EURYCARP | 111.9             | 102.6                        | 2500                |  | 0.2               |          |

EMERGENT MACROPHYTE ANDRE DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA 2. TRACE = LESS THAN 0.001 G/M2

| RIVER ISLAND                                   | ISLAND BLOCK<br>NO.                     | BLOCK<br>NO.          | A<br>P<br>S  | LO<br>COORD<br>JPPER | ~      | DEPTH<br>(FT.) | MACROPHYTE<br>TAXON                                   | DRY WEIGHT (G/M2)    | ASH-FREE L<br>WEIGHT<br>(G/M2) | LIGHT (FOOT    | CANDLES) | CURRENT(FT./SEC. | f./SEC.)                                |
|--|---|-----------------------|--|----------------------|--------|----------------|---|----------------------|--------------------------------|----------------|----------|------------------|---|
| ST. CLAIR FAWN                                 | FAWN                                    | 7                     |  | 4 309584             | 498268 | 2.0            | SCIRPUS ACUTIS  | 222.2                | 203.4                          | 3000           | 200      | 0.2              | 0.0                                     |
| •  |   |                       | 0  | 5 309584             | 498268 | 2.0            | 2.0 SCIRPUS ACUTIS                                    | 286.1                | 271.0                          | 3000           | 200      | 0.2              | 0.0                                     |
| 医多甲状腺素 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 | * # # # # # # # # # # # # # # # # # # # |                       |  |                      | 498268 | 2.0            | SCIRPUS ACUTIS  | 283.1                | 263.5                          | : ``           | 200      | 0.2              | 0.0                                     |
| DETROIT  | STONY                                   | 60                    | 4  | 0                    | ٥      | 2.0            | TYPHA AN  | 1609.9               | 1271.3                         | 2100           | 1500     | 0.3              | # # #   #   #   #   #   #   #   #   #   |
|  |   |                       | 6  | 0                    | 0      | 2.0            |   | 2968.9               | 2632.3                         | 2100           | 1500     | 0.3              |   |
|  |   | #<br>#<br>#<br>#<br># | 9  | 0                    | 0      | 2.0            | TYPHA ANGUSTIFOL                                      | 1810.2               | 1470.1                         | 2100           | 1500     | 0.3              | * |
|  |   | 5                     | 4  | 0                    | 0      | 0.5            | SPARG, EURYCARP                                       | 227.4                | 164.7                          |                |          | 0.1              | ***                                     |
|  |   |                       | 8  | ٥                    | ٥      | 0.5            | SPARG. EURYCARP                                       | 197.0                | 164.2                          |                |          | 0.1              |   |
|  |   |                       | 9  | 0                    | 0      | 0.5            | SPARG. EURYCARP                                       | 450.6                | 388.8                          | 1000           |          | 0.1              |   |
|  |   |                       | 7  |                      | 0      | 0.5            | SAG.LATIFOLIA<br>SCIRPUS FLUVIATI                     | 35.6<br>854.1        | 30.9<br>602.5                  | 1100           |          | 0.1              | 4<br>8<br>8<br>9<br>1                   |
|  |   |                       | 1 00 1 | 60                   | 0      | ە.<br>ئ        | SAG.LATIFOLIA<br>SCIRPUS FLUVIATI<br>PHAL. ARUNDINACE | 5.5<br>936.6<br>29.6 | 693.3<br>26.8                  | - 100<br>- 100 |          | 0.1              | * * * * * * * * * * * * * * * * * * *   |
|  |   |                       | 6 H  | 0                    | 0      | O . S          | SAG.LATIFOLIA<br>SCIRPUS FLUVIATI                     | 11.3<br>1106.8       | 89.8.8                         | 100            | 2        | 0.1              | %<br>#<br>#<br>#<br>#<br>#<br>#         |
|  |   |                       | <b>6</b>   |                      | 0      | 0              | SCIRPUS AMERICAN<br>SCIRPUS ACUTIS                    | 207.0<br>2.8         | 190.2<br>2.5                   | 2300           |          | 0.0              |   |
|  |   |                       | = !  | 11 0                 | 0      | 0.             | E. SMALII<br>SCIRPUS AMERICAN                         | 38.2<br>184.4        | 34.8<br>144.6                  | 2300           | # 10 mm  | 0.3              |   |
|  |   |                       | 22   | 0                    | 0      | 0.             | E. SMALII<br>SAG.LATIFOLIA<br>SCIRPUS AMERICAN        | 36.2<br>1.0<br>307.5 | 33.7<br>0.9<br>279.6           | 2300           |          |                  |   |

EMERGENT MACROPHYTE (MEMER DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER          | ISLAND | BLOCK<br>NO. | ISLAND BLOCK REPLICATE<br>NO. NO. | COORD<br>UPPER | LORAN<br>COORDINATES<br>PPER LOWER | 0EPTH<br>(FT.) | MACROPHYTE<br>TAXON              | DRY WEIGHT (G/M2)                       | ASH-FREE L<br>WEIGHT<br>(G/M2) | LIGHT (FOOT CANDLES) | CANDLES) | CURRENT(FT./SEC. | ./SEC.)                                      |
|----------------|--------|--------------|-----------------------------------|----------------|------------------------------------|----------------|----------------------------------|---|--------------------------------|----------------------|----------|------------------|--|
| ST. CLAIR FAWN | FAWN   | 7            | ST. CLAIR FAWN 7 7 309564 4       | 309584         | 309584 498268                      | 2.0            | SCIRPUS ACUTIS                   | 317.6                                   | 292.0                          | 2000                 |          |                  | 16 20 10 10 10 10 10 10 10 10 10 10 10 10 10 |
|                |        |              | <b>.</b>                          | 309584         | 8 309584 498268                    | 2,0            | SCIRPUS ACUTIS                   | 394.1                                   | 270.4                          | 2000                 |          | 0.1              |  |
|                |        |              | o                                 | 30958          | 309584 498268                      | 2.0            | SCIRPUS ACUTIS                   | 317.7                                   | 296.5                          | 2000                 |          | 0.1              |  |
| DETROIT        | STONY  | 9            | DETROIT STONY 10 4 314241 5       | 31424          | 314241 500998                      | 0              | TYPHA ANGUSTIFOL                 | 628.7                                   | 580.2                          | 450                  |          | 0.0              |  |
|                |        |              |                                   | 314241         | 314241 500998                      | o              |                                  | 658.1                                   | 616.3                          | 450                  |          | 0.0              | 66<br>19<br>10<br>10<br>10<br>10<br>10<br>10 |
|                |        |              | 9                                 | 6 314241 5     |                                    | 0              |                                  | 656. 1                                  | 496.7                          | 450                  |          | 0.0              |  |
|                |        |              | 7                                 | 7 314240 5     |                                    | 0              |                                  |   | 79.2                           | 650                  |          | 0.0              |  |
|                |        |              | #<br>#<br>#<br># 40               | 314240 5       | 314240 500997                      | 0              | SPARG. EURYCARP                  | 161.6                                   | 92.3                           | 650                  |          | 0.0              |  |
|                |        |              |                                   | 314240 5       | 314240 500997                      | 0.1            |                                  | 108.6                                   | 7.77                           | 650                  |          | 0.0              |  |
|                |        |              | 0                                 | 10 314239 5    | 314239 500997                      | 0.             |                                  |   | e. e.                          | 009                  |          | 0.0              |  |
|                |        |              | :<br>:<br>:<br>:<br>:             |                | 314238 500997                      | 0.0            |                                  | # # # # # # # # # # # # # # # # # # #   | 94.3                           | 009                  |          | 0.0              |  |
|                |        |              | 12                                | 2 314239 5     |                                    | 0              | SCIRPUS AMERICAN SCIRPUS VALIDUS | 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 121.6<br>27.8                  | 009                  |          | D . O            |  |
|                |        | =            | 11 4 314250 E                     | 31425          |                                    | 0,-            | SPARG. EURYCARP                  | 243.5                                   | 151.9                          | 200                  |          | 0.0              |  |
|                |        |              | 6                                 | 5 314250 5     | 314250 501006                      | <u>-</u><br>0. | SPARG. EURYCARP                  | 219.4                                   | 140.9                          | 200                  |          | 0.0              | 1  |
|                |        |              | 9                                 | 314250 5       | 314250 501006                      | 0.             | SPARG. EURYCARP                  | 288.3                                   | 194.0                          | 200                  |          | 0.0              |  |

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER                                 | ISLAND | BLOCK<br>NO.                            | REPLICATE<br>NO.      | LOR.       | AN<br>NATES | DEPTH<br>(FT.)                        | MACROPHYTE<br>TAXON  | DRY WEIGHT                    | LLI                                 | LIGHT (FOOT  | CANDLES) | CURRENT (FT | ./SEC.) |
|---------------------------------------|--------|---|-----------------------|------------|-------------|---------------------------------------|--|-------------------------------|-------------------------------------|--------------|----------|-------------|---------|
| # # # # # # # # # # # # # # # # # # # |        | *************************************** |                       | UPPER      | LOWER       | # # # # # # # # # # # # # # # # # # # |  | (G/M2)                        | (G/M2)                              | SURFACE      | BOTTOM   | SURFACE     | BOTTOM  |
| DETROIT                               | STONY  | 0                                       | 4                     | 314246     | 501003      | 2.0                                   | POT. CRISPUS<br>TYPHA ANGUSTIFOL   | 0.5<br>6.86.9                 | 0.4<br>601.2                        |              | 3100     | 0.0         | 0.0     |
|                                       |        |   | ו<br>ו<br>ו<br>ו<br>ו | 5 314246   | 501003      | 2.0                                   | TYPHA ANGUSTIFOL   | 147.1                         | 129.6                               | 3500         | 3100     | 0.0         | 0.0     |
|                                       |        |   | 9                     | 314246     | 501003      | 2.0                                   | 6 314246 501003 2.0 TYPHA ANGUSTIFOL   | 426.1                         | 403.2                               | 3500         | 3100     | 0.0         | 0.0     |
|                                       |        |   | 7                     | 314242     | 501000      | 2.0                                   | SCIRPUS AMERICAN<br>SCIRPUS VALIDUS<br>PHAL, ARUNDINACE                                    | 68.7<br>23.6<br>13.1          | 54.0<br>20.8<br>10.8                | 3600         | 3600     | 0.2         | 0.2     |
|                                       |        |   | æ                     |            | 501000      | 2.0                                   | CF.<br>IRPUS<br>IRPUS  | 62.2<br>80.0<br>61.5          | 50.4<br>72.0<br>50.4                | 3600         | 3600     | 0.2         | 0.2     |
|                                       |        |   | æ                     |            | 501000      | 7.0<br>0.0                            | E. CF. ERYTHRO<br>SCIRPUS AMERICAN<br>SCIRPUS VALIDUS<br>SCIRPUS ACUTIS<br>SPARG. EURYCARP | 25.5<br>141.6<br>26.9<br>17.1 | 15.3<br>12.4<br>14.0<br>14.0<br>2.6 | 3600<br>3600 | 0098     | 0<br>.0     |         |
|                                       |        |   | 0                     | 314238     | 500998      | 2<br>0                                | SAG. RIGIDA<br>SAG. RIGIDA   |                               | 10.7                                | 3900         | 2600     | 0.1         | 0.0     |
|                                       |        |   | =                     |            | 500998      | 2.0                                   | ELODEA CANADENS<br>SAG. RIGIDA<br>SAG. RIGIDA  | 0.3<br>14.6<br>33.8           | 32.6<br>3.6                         | 3900         | 2600     | 0           | 0.0     |
|                                       |        |   | 7                     |            | 500998      |                                       | SAG. RIGIDA  | 27.8<br>34.3                  | 4.7                                 | 3900         | 2600     | 0.4         | 0.0     |
|                                       |        | -                                       |                       | 1 314250 5 | 501004      | 2.0                                   | SPARG. EURYCARP  | 307.6                         | 234.0                               | 3200         | 3200     | 0.0         | 0.0     |
|                                       |        |   | 7                     |            | 501004      | 2.0                                   | SPARG. EURYCARP  | 203.0                         | 176.4                               | 3200         | 3200     | 0.0         | 0.0     |
|                                       |        |   | e                     |            | 501004      | 5.0                                   | SPARG. EURYCARP  | 267.7                         | 237.6                               | 3200         | 3200     | 0.0         | 0.0     |
|                                       |        |   | 4                     |            | 501007      | 2.0                                   | SAG.LATIFOLIA  | 11.8                          | 3.3                                 | 3200         | 3200     | 0.0         | 0.0     |
|                                       |        |   | ហ                     | 314249     | 501007      |                                       | POT. CRISPUS<br>SAG.LATIFOLIA<br>SPARG. EURYCARP   | 0.2<br>23.9<br>1.5            | 0 +<br>1 - 4 -<br>1 - 3 -           | 3200         | 3200     | 0.0         | o.<br>o |
|                                       |        |   | 9                     | 6 314249 5 | 501007      | 2.0                                   | SAG. RIGIDA<br>SPARG. EURYCARP<br>SPARG. EURYCARP  | 28.8<br>0.3<br>39.0           | 21.6<br>0.2<br>28.4                 | 3200         | 3200     | 0.0         | o. o    |

!

EMERGENT MACROPHYTE MANTE DATA, JULY-AUGUST, 1984

ST. CLAIR FAWN

RIVER

DETROIT

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

7 314241 501001 0.5 E. CF. ERYTHRO 6.1 5.2 2900 2900 0.1
HETERATHER DUB 0.2 0.2
HYRIO: SPICATUM 0.6 0.5
SCIRPUS AMERICAN 389.0 338.4
SCIRPUS VALIDUS 42.9 32.4
VALISNERIA AMER 0.1 0.1 6 314246 501004 0.5 TYPHA SPP. 1157.4 1090.8 2800 2900 0.2 0.1 4 314246 501004 0.5 TYPHA SPP. 1037.0 946.8 2800 2900 0.2 0.1 DRY WEIGHT ASH-FREE LIGHT(FOOT CANDLES) CURRENT(FT./SEC.) SURFACE BOTTOM 0.7 <del>.</del> <u>.</u> 0.7 0 . 0 0.5 0.5 SURFACE BOTTOM 3000 2900 50.4 4000 910.8 2800 2900 2900 14.5 216.0 9.2 0.4 309.6 36.0 (G/M2) WEIGHT 10.8 0.9 0.6 19.4 72.3 73.9 16.7 269.9 975.4 (G/M2) E. CF. ERYTHRO ELODEA CANADENS MYRIO. SPICATUM SCIRPUS AMERICAN SCIRPUS VALIDUS PHAL. ARUNDINACE 16日分钟的现代的英国建筑和国际的领 SAG.LATIFOLIA SCIRPUS AMERICAN SCIRPUS VALIDUS SPARG. EURYCARP 309583 498272 2.5 SCIRPUS ACUTIS MACROPHYTE 314246 501004 0.5 TYPHA SPP. TAXON TYPHA SPP DEPTH (FT.) 0 314241 501001 0.5 UPPER LOWER 314241 501001 COORDINATES LORAN REPLICATE . **2** 0 ហ Ø BLOCK . 2 ç ISLAND

|  | . 0. 1   | 0.1                     | **************************************    | 0.1                                     | PR                            |
|--|--|-------------------------|---|---|-------------------------------|
| 0.1  | 2400 2400 0.1 0.1  | 2400 2400 0.1 0.1       | 0.9 2900 2900 0.1 0.1<br>201.6            | 86.4 2900 2900 0.1 0.1<br>230.4         |                               |
| 2400   | 2400   | 2400                    | 2900                                      | 2900                                    | 32.4 2900 2900<br>198.0       |
| 0.9 2400<br>309.6<br>302.4                                       | 2400   | 0.5 2400<br>0.1<br>33.2 | 0.9 2900<br>01.6                          | 86.4 2900<br>30.4                       | 2900                          |
| 0.9<br>309.6<br>302.4  | 25.2<br>554.4  | 0.5<br>0.1<br>583.2     | 0.9                                       |   | 32.4                          |
|  | 1.3<br>36.9<br>685.6   | 0.8<br>0.1<br>715.6     | 2.0                                       | 110.1                                   | 48.0<br>255.5                 |
| 501008 O.5 ELDDEA CANADENS<br>SPARG. EURYCARP<br>SPARG. EURYCARP | 501008 O.5 ELDDEA CANADENS<br>SAG.LATIFOLIA<br>SPARG. EURYCARP |                         | 501007 O.5 ELGDEA CANADENS<br>SAG. RIGIDA | 501007 0.5 SAG.LATIFOLIA<br>SAG. RIGIDA | SAG. LATIFOLIA<br>SAG. RIGIDA |
| 0 .5   | O.5  | Q<br>R                  | بة<br>0                                   | 0.5                                     | O. 55                         |
| 8 501008   | 501008   | 501008 0.5              | 501007                                    | 501007                                  |                               |
| į.   | 2 314248   | 314248                  | 4 314249                                  | 5 314249                                | 314249                        |
| # H  | #<br>#<br>#<br>#   | m                       | 7   | ر<br>م                                  | ø                             |

M-6

EMERGENT MACROPHYTE CHEME DATA, SEPTEMBER, 1984

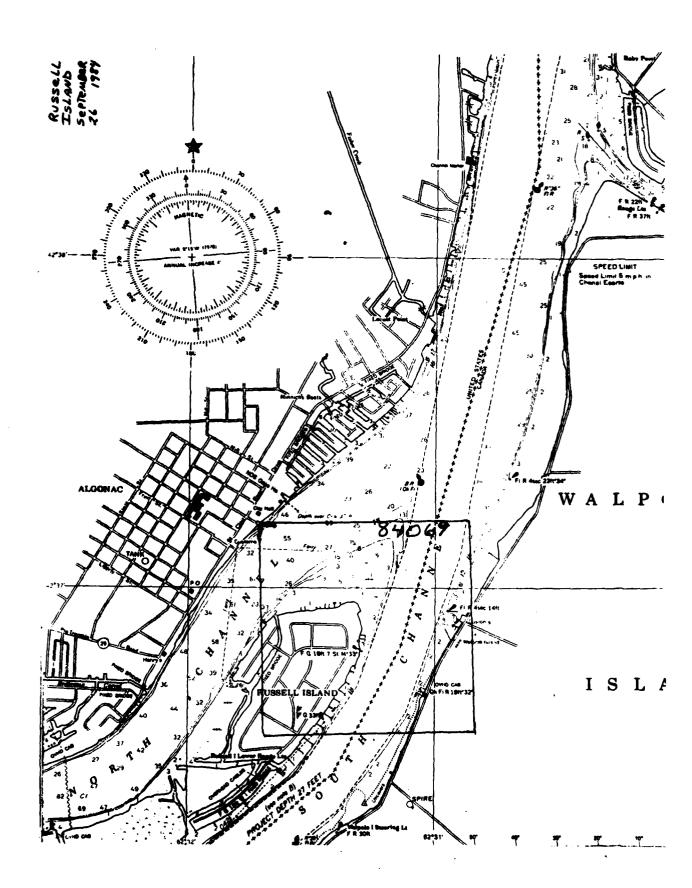
NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

| RIVER              |       | BLOCK<br>NO. | REPLICATE<br>NO. | COORD<br>UPPER | LORAN<br>COORDINATES<br>IPPER LOWER | <b>ДЕРТН</b><br>(FT.) | MACROPHYTE<br>Taxon   | DRY WEIGHT (G/M2)           | ASH-FREE L<br>WEIGHT<br>(G/M2) | LIGHT (FOOT<br>SURFACE | CANDLES) | CURRENT (FT | r./sec.)<br>Bottom                                |
|--------------------|-------|--------------|------------------|----------------|-------------------------------------|-----------------------|---|-----------------------------|--------------------------------|------------------------|----------|-------------|---|
| ST. CLAIR FAWN     |       | 7            | 7 4 309585       | 309585         | • 4                                 | 2.5                   | SCIRPUS ACUTIS  | 403.8                       | 291.6                          | 560                    | 430      | 0.1         | 0.0   |
|                    |       |              | ß                | 5 309585       |                                     | 2.5                   | SCIRPUS ACUTIS  | 292.3                       | 259.2                          | 560                    | 430      | 0.4         | 0.0   |
|                    |       |              | 9                | 309585         | 498271                              | 2.5                   | SCIRPUS ACUTIS  | 115.4                       | 204.9                          | 260 mm                 | 430      | 0.4         | 0.0   |
| DETROIT STONY 10 4 | STONY | ō            | ₹ `              | 314241         | 500998                              | o.                    | E. CF. ERYTHRO<br>SCIRPUS AMERICAN<br>SCIRPUS VALIDUS<br>SCIRPUS FLUVIATI | 46.9<br>46.9                | 316.8<br>43.2<br>7.7           | 3400                   | 3400     | 4.0         | M O M 4   |
|                    |       |              | ស                | 5 314241       | 500998                              | 0. <del>1</del>       | E. CF. ERYTHRO<br>SCIRPUS AMERICAN<br>SCIRPUS VALIDUS<br>SCIRPUS ACUTIS   | 5.7<br>435.4<br>53.0<br>2.1 | 331.2<br>44.2<br>1.9           | 3400                   | 3400     | 4 4         | 8 0 0 8 4 . 0 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 |
|                    |       |              | ø                | 314241         | 500998                              | o.<br>-               | SCIRPUS AMERICAN<br>SCIRPUS VALIDUS                                       | 477.0                       | 356.4<br>5.8                   | 3400                   | 3400     | 0.4         | 4.0   |
|                    |       |              | 7                | 7 314243       | 501001                              | <del>-</del><br>0.    | TYPHA ANGUSTIFOL  | 1196.7                      | 914.4                          | 0006                   | 0006     | 0.2         | 0.2   |
|                    |       |              | 60               | 8 314243       |                                     | <del>-</del><br>0.    | TYPHA ANGUSTIFOL  | 2022.3                      | 1573.2                         | 0006                   | 0006     | 0.2         | 0.2   |
|                    |       |              |                  | 314243         |                                     | o.<br>-               | 4   | 2.4<br>977.3                | 2.0<br>763.2                   | 9000                   | 0006     | 0.2         | 0.2   |
|                    |       | =            |                  | 4 314248       | 501006                              | -<br>0.               | SPARG. EURYCARP   | 397.9                       | 297.9                          | 3400                   | 3400     | 0.0         | 0.0   |
|                    |       |              | ம                | 5 314248       | 501006                              | 0.                    | SPARG. EURYCARP<br>SPARG. EURYCARP  | 313.1<br>338.9              | 217.1<br>266.4                 | 3400                   | 3400     | 0.0         | 0.0   |
|                    |       |              | 9                | 314248         | n No (                              | <u>.</u><br>0.        | SPARG. EURYCARP   | 574.5                       | 385.2                          | 3400                   | 3400     | 0.0         | 0.0   |
|                    |       |              | 7                |                | 501006                              | <del>-</del><br>0.    | SAG. RIGIDA   | 246.6                       | 165.6                          | 780                    | 780      | 0.1         | 0.1   |
|                    |       |              | 60               | 314248         |                                     | o.<br>-               | SAG. RIGIDA   | 361.9                       | 280.8                          | 780                    | 780      | 0.1         | 0.1   |
|                    |       |              | # D              | 314248         | 501006                              | 0.                    | SAG. RIGIDA   | 325.6                       | 226.8                          | 780                    | 780      | 0.4         | 0.1   |

### APPENDIX N

Index Charts for Aerial Photographs and Photographs of Macrophyte Study Areas

[Only two pages of Appendix N are reproduced as part of this report. The charts and photographs are available on request from the U.S. Army Corps of Engineers, Detroit District, or the Great Lakes Fishery Laboratory.]



N - 1



### APPENDIX O

### Macrophyte Distribution Maps

Because diversity of taxa within beds was great, it was not possible to outline the exact distribution of each species. The following legend places dominant taxa in a general area; the text discusses the location more specifically. The legend for Figs. 1-36 follows (see Fig. 16, for an example of the three types of shading used). In all figures "Potamogeton spp." = narrow-leaf forms of Potamogeton.

|              | Type of Shading |               |
|--------------|-----------------|---------------|
| Black        | Stippling       | Crosshatching |
| <del>-</del> |                 |               |

St. Clair River, Figs. 1-9 (1983) and 19-27 (1984)

Scirpus acutus

<u>Chara</u> Potamogeton spp. Elodea canadensis
Myriophyllum spicatum
Potamogeton gramineus
Potamogeton spp.
Potamogeton richardsonii

Detroit River, Figs. 10-18 (1983) and 28-36 (1984)

Sparganium eurycarpum Typha angustifolia Potamogeton spp. Vallisneria

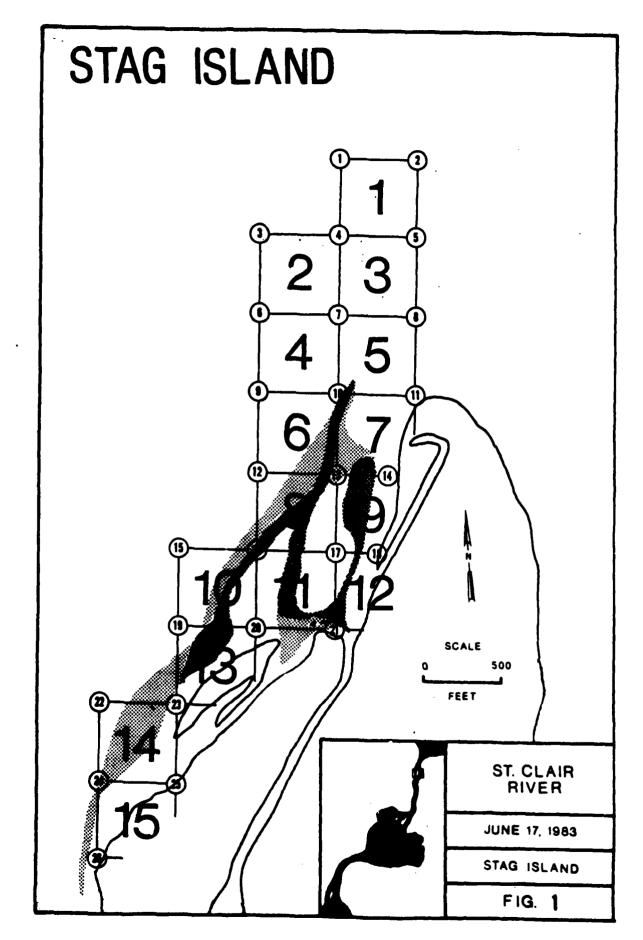
Heteranthera dubia

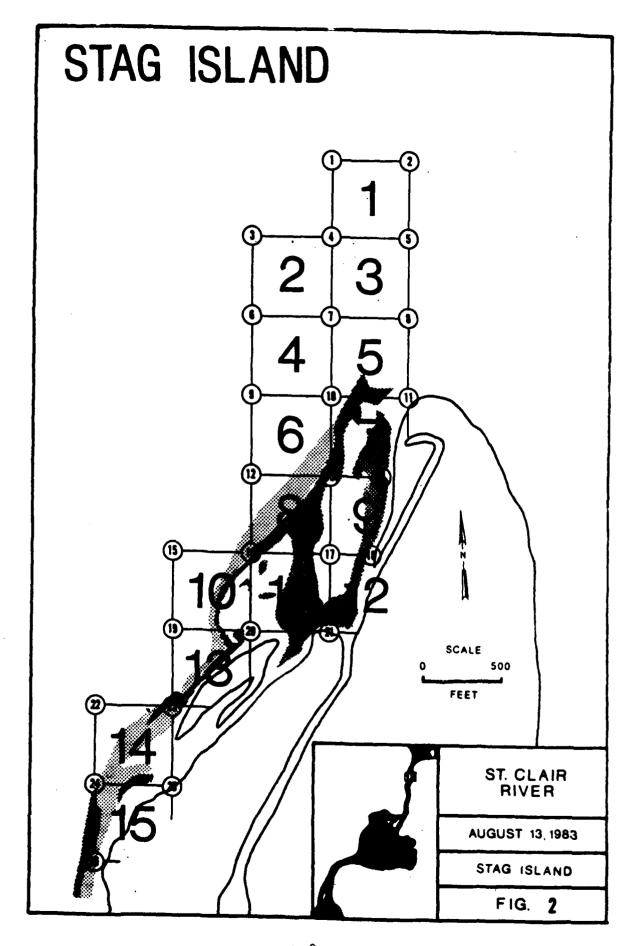
Kyriophyllum spicatum

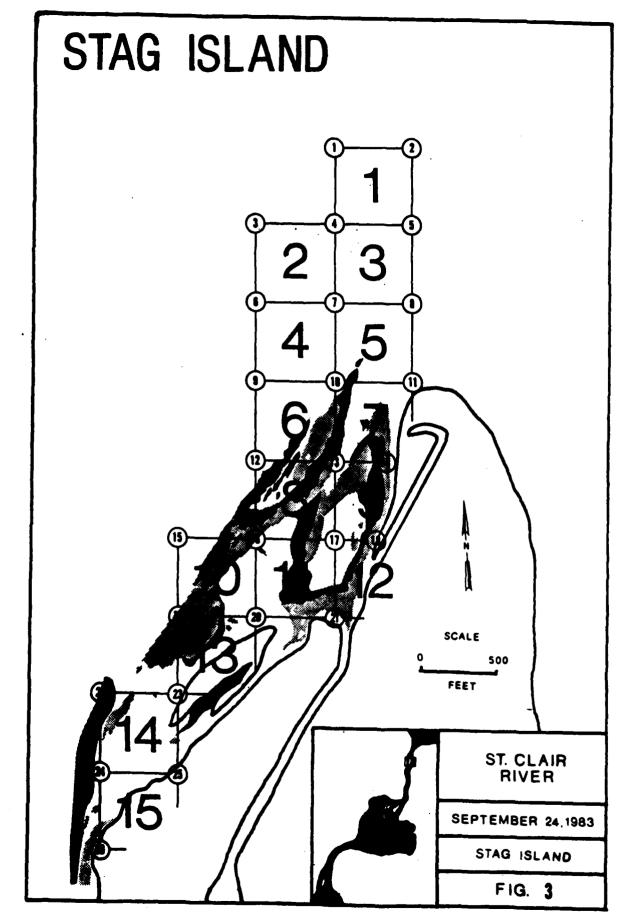
Potamogeton crispus

Potamogeton spp.

Potamogeton richardsonii

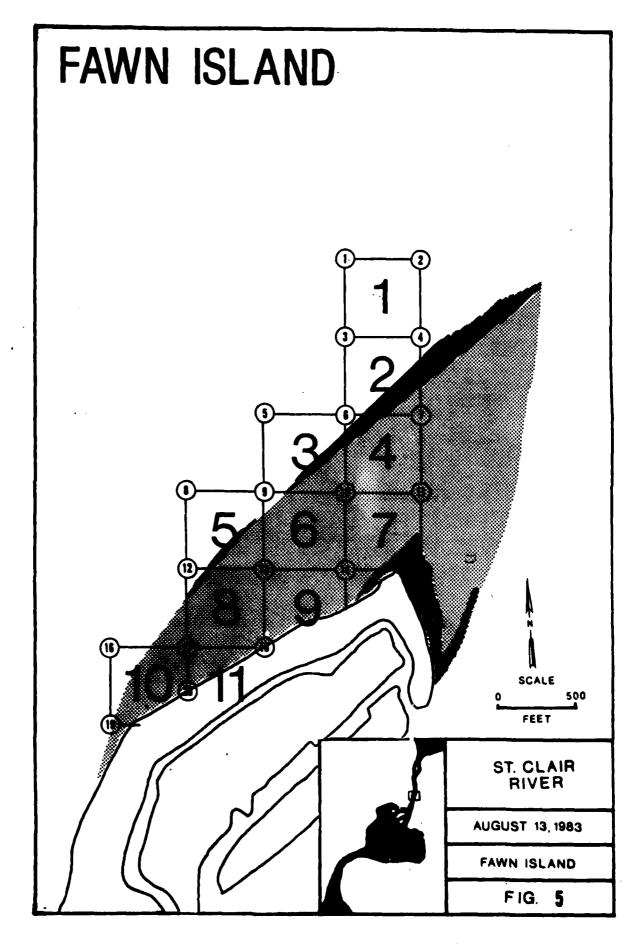






# FAWN ISLAND 500 FEET ST. CLAIR RIVER JUNE 17, 1983 FAWN ISLAND FIG. 4

1



L

## FAWN ISLAND SCALE 500 FEET ST. CLAIR RIVER **SEPTEMBER 24,1983** FAWN ISLAND FIG. 6

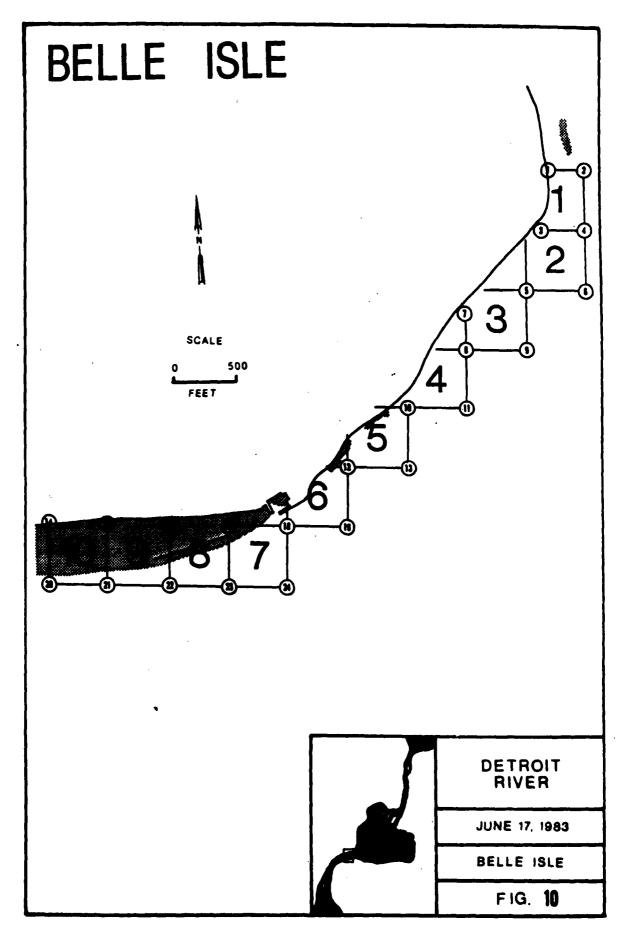
Ť

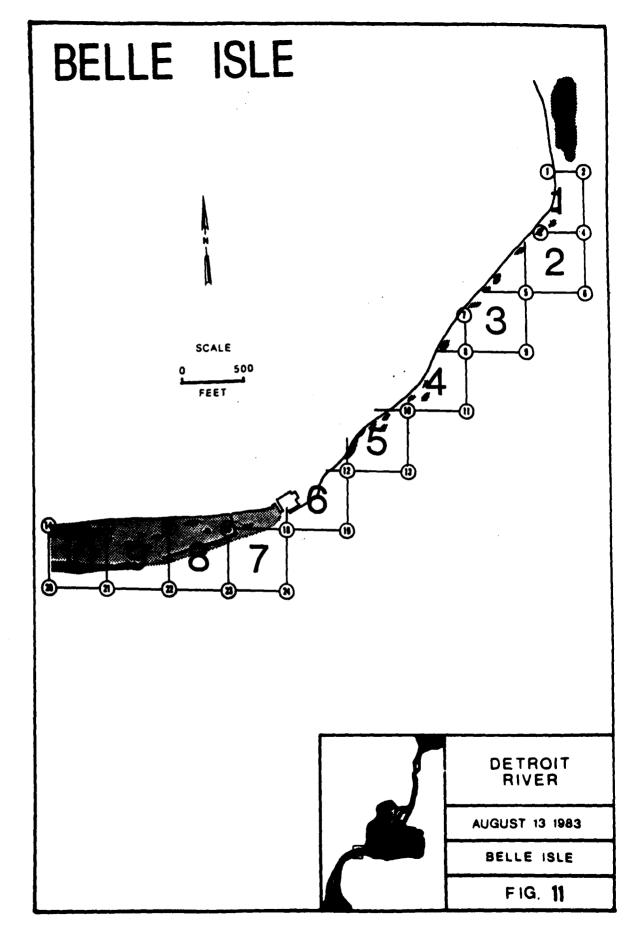
## RUSSELL ISLAND SCALE ST. CLAIR RIVER 500 FEET JUNE 17, 1983 RUSSELL ISLAND FIG.

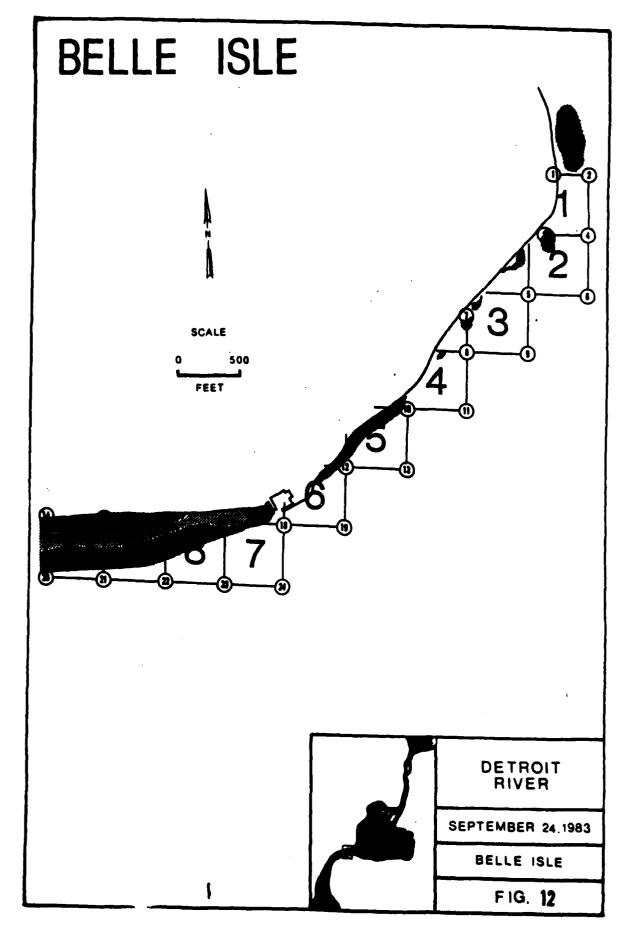
## RUSSELL ISLAND SCALE ST. CLAIR RIVER 500 FEET AUGUST 13, 1983 RUSSELL ISLAND FIG. 8

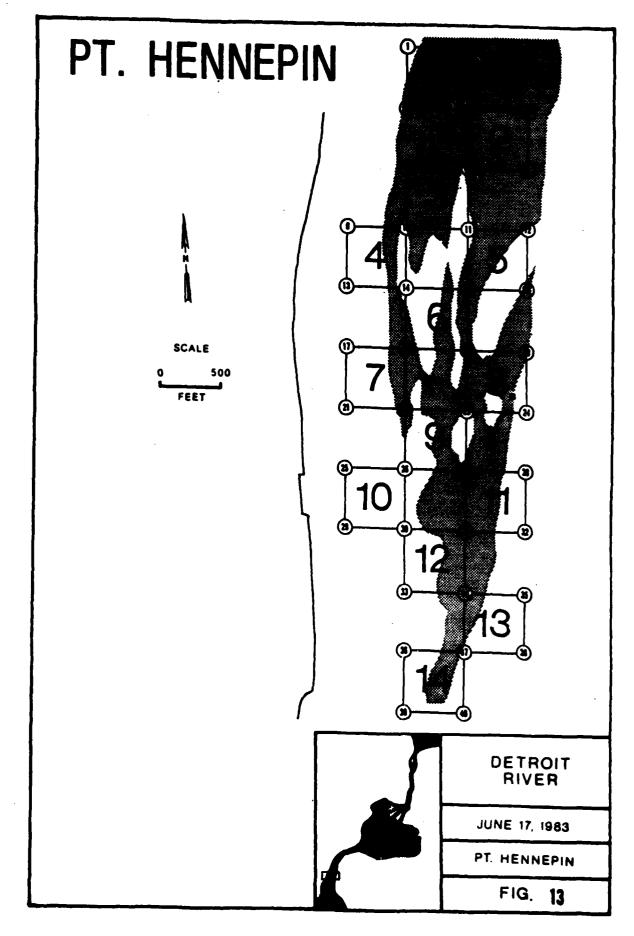
RUSSELL ISLAND

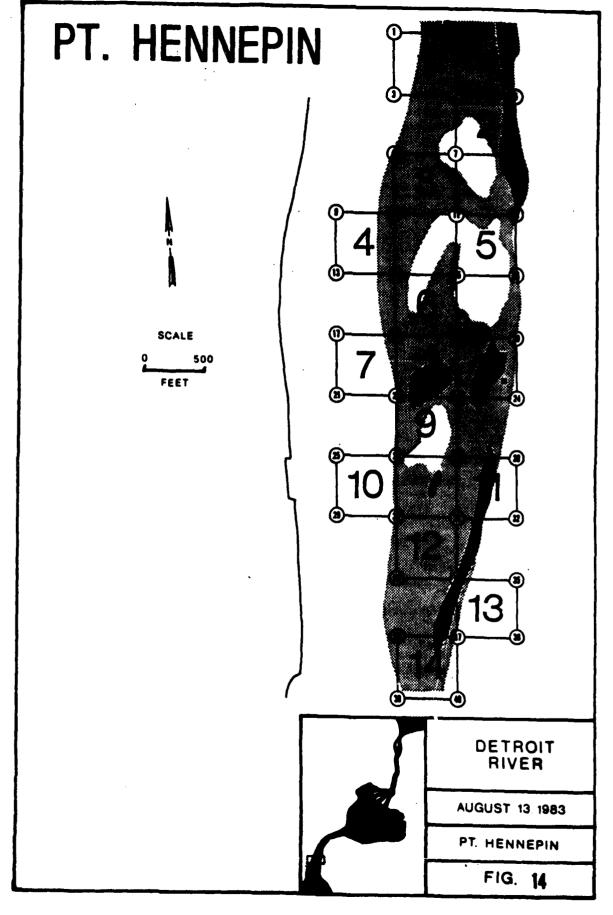
SCALE ST. CLAIR RIVER 500 FEET **SEPTEMBER 24.1983** RUSSELL ISLAND FIG.

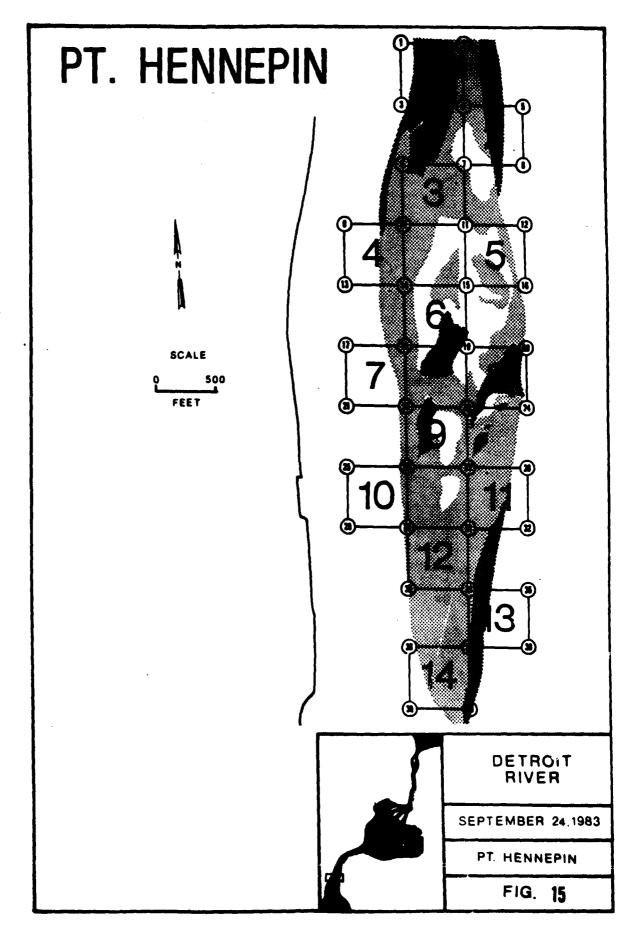






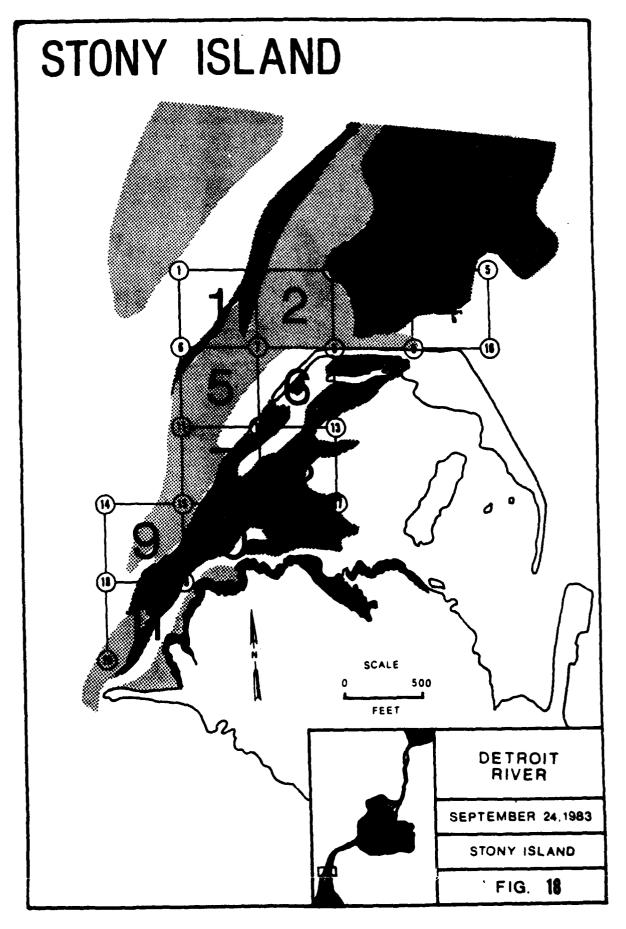


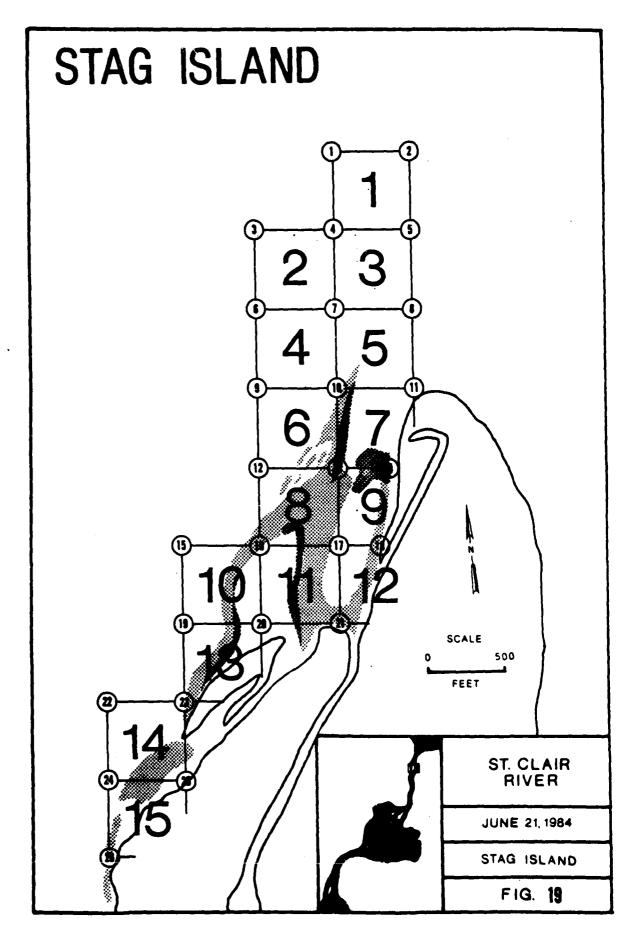


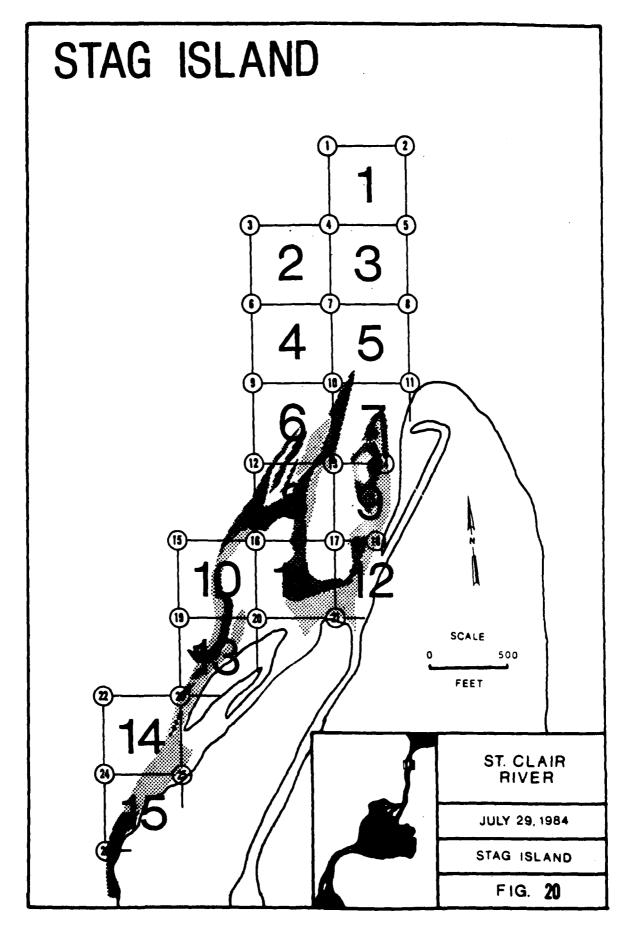


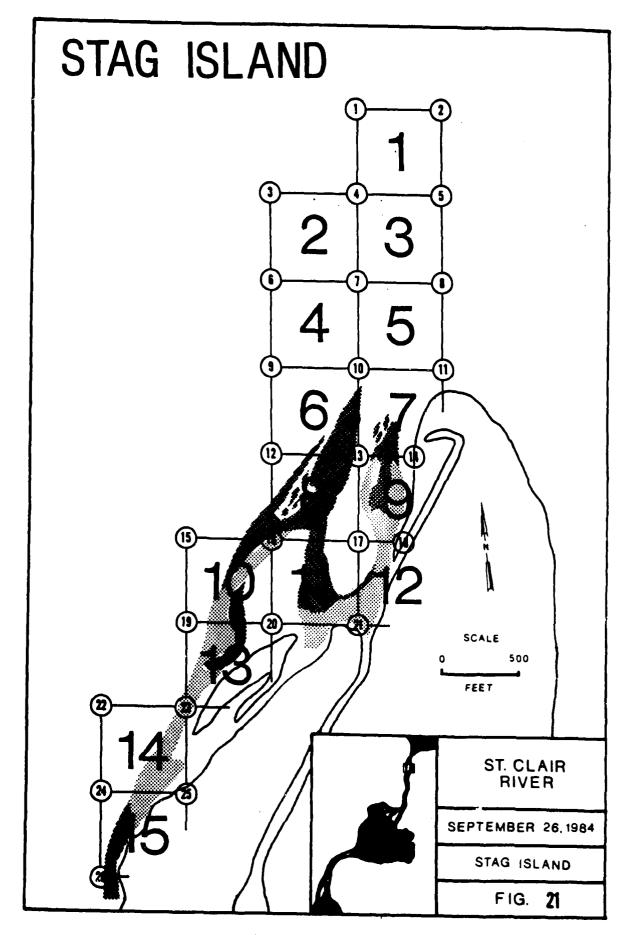
# STONY ISLAND SCALE FEET DETROIT RIVER JUNE 17, 1983 STONY ISLAND FIG. 16

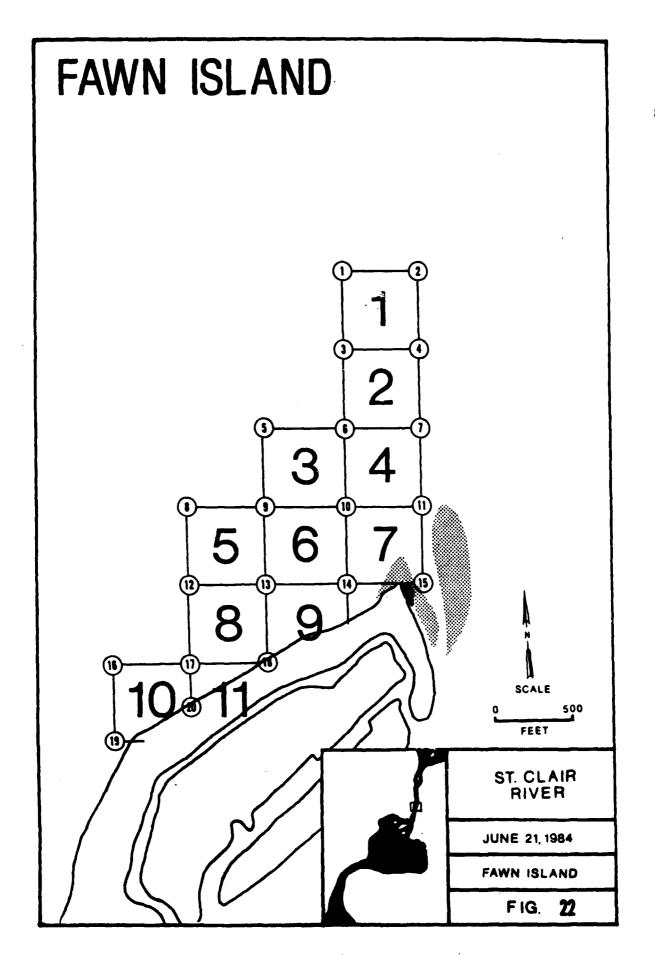
STONY ISLAND SCALE 500 FEET DETROIT AUGUST 13, 1983 STONY ISLAND FIG. 17









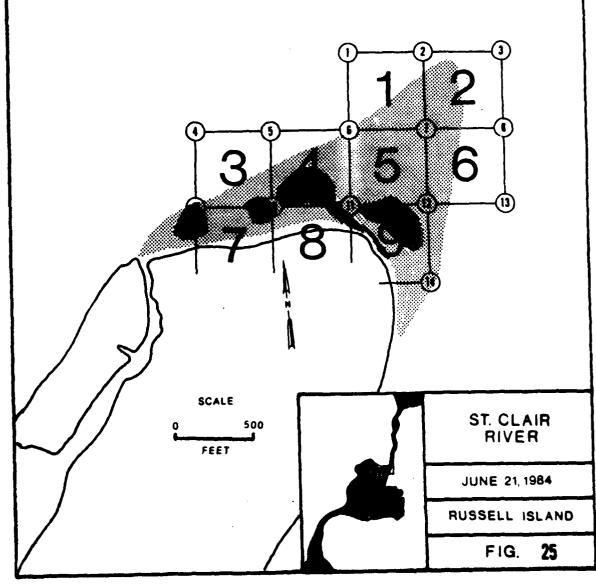


S. S. San San March College

# FAWN ISLAND SCALE 500 FEET ST. CLAIR RIVER JULY 29, 1984 FAWN ISLAND FIG. 23

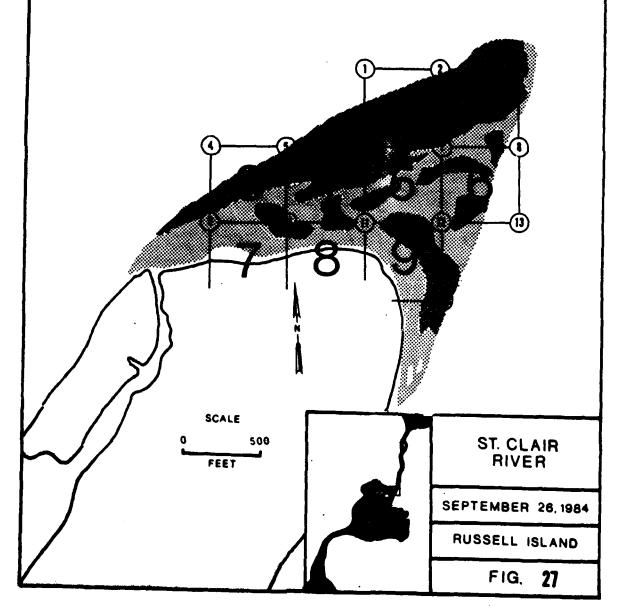
# FAWN ISLAND SCALE 500 FEET ST. CLAIR RIVER **SEPTEMBER 26, 1984** FAWN ISLAND FIG. 24

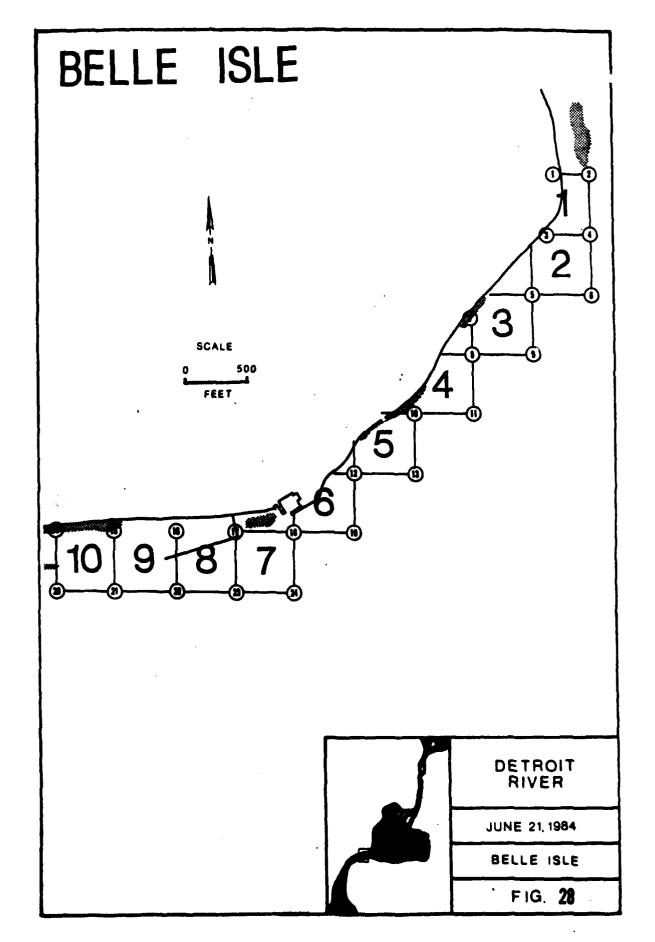
## RUSSELL ISLAND

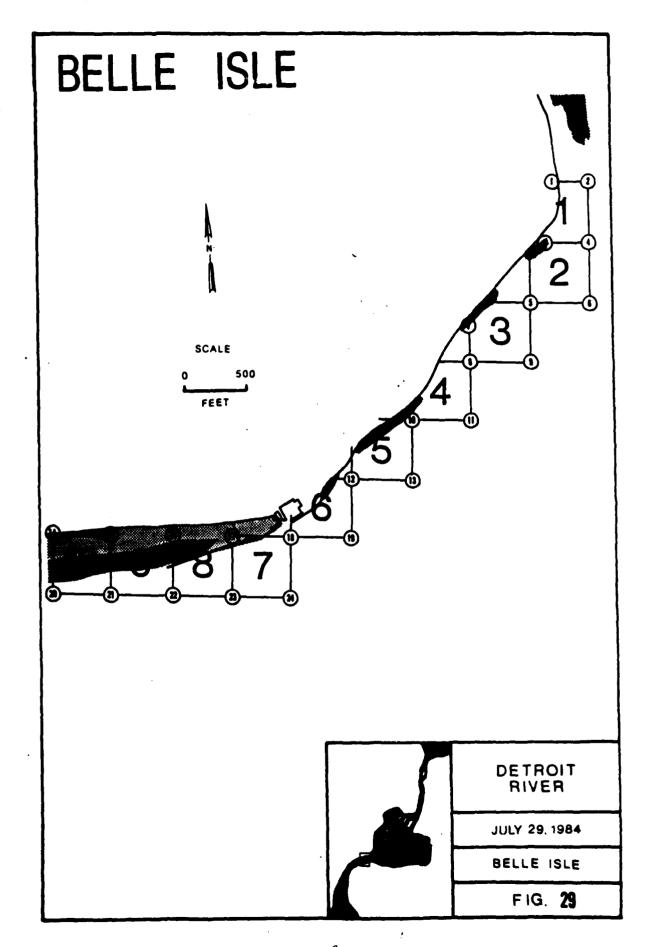


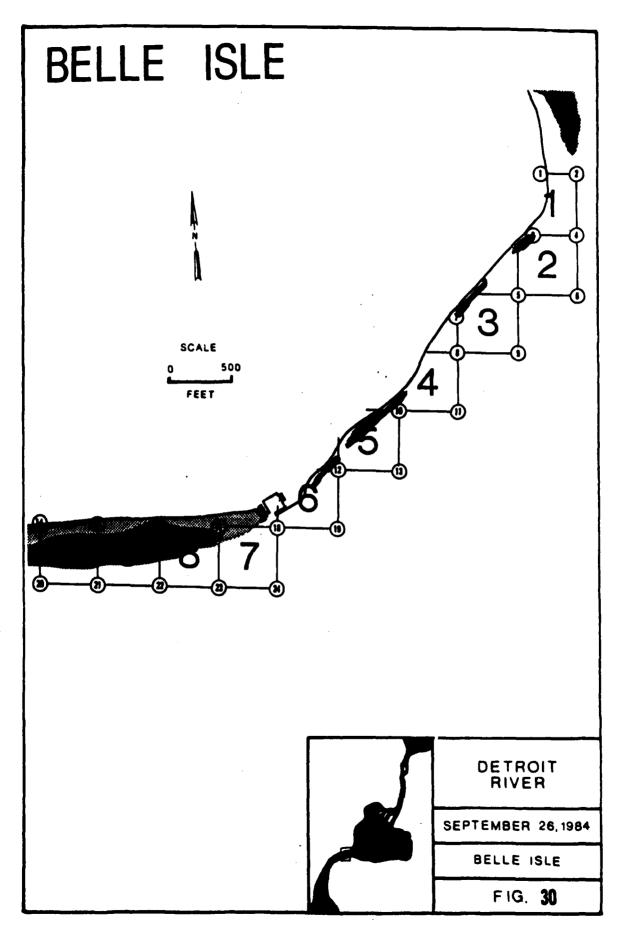
0-25

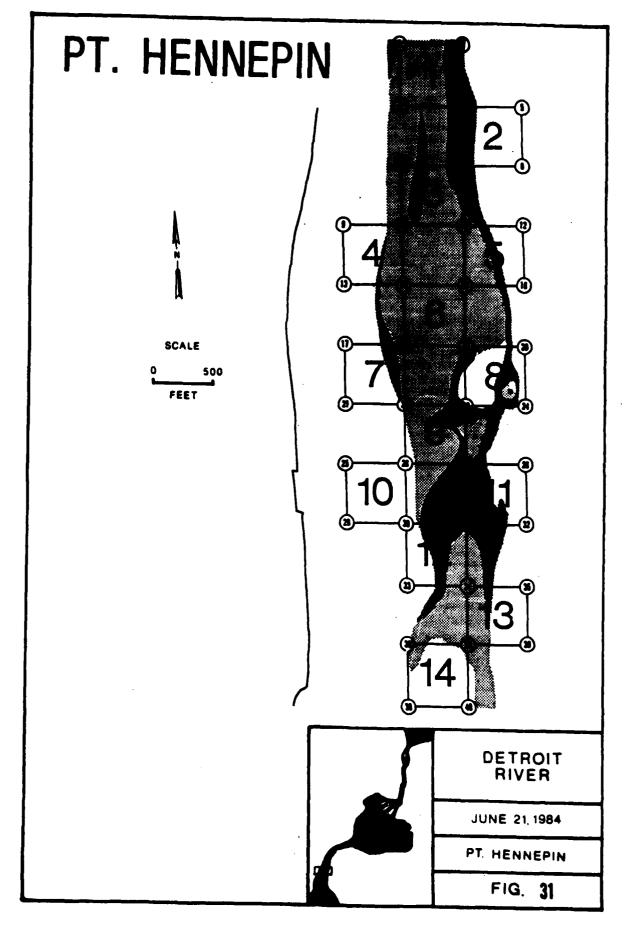
# RUSSELL ISLAND SCALE ST. CLAIR RIVER FEET JULY 29, 1984 RUSSELL ISLAND FIG. 26



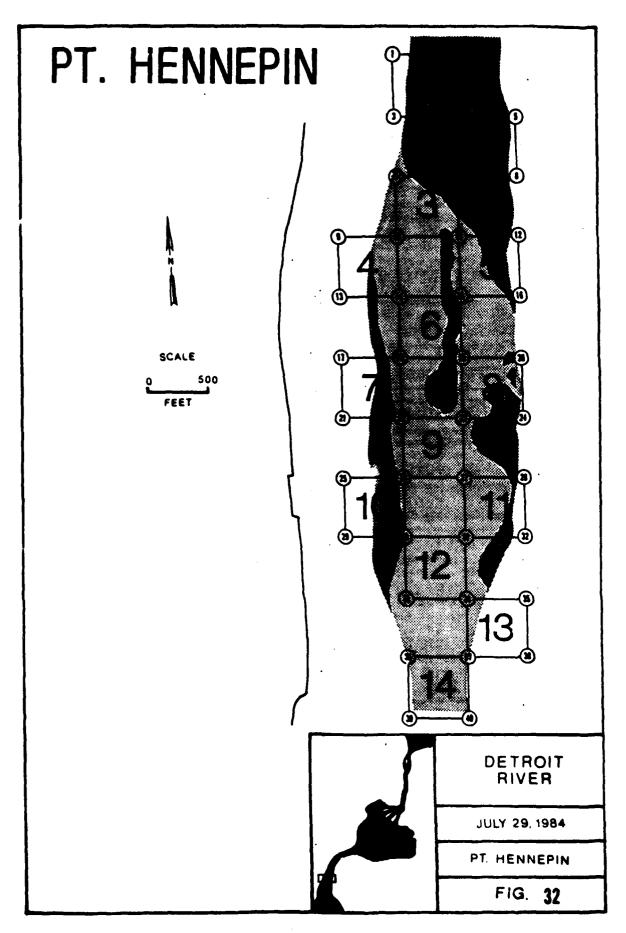


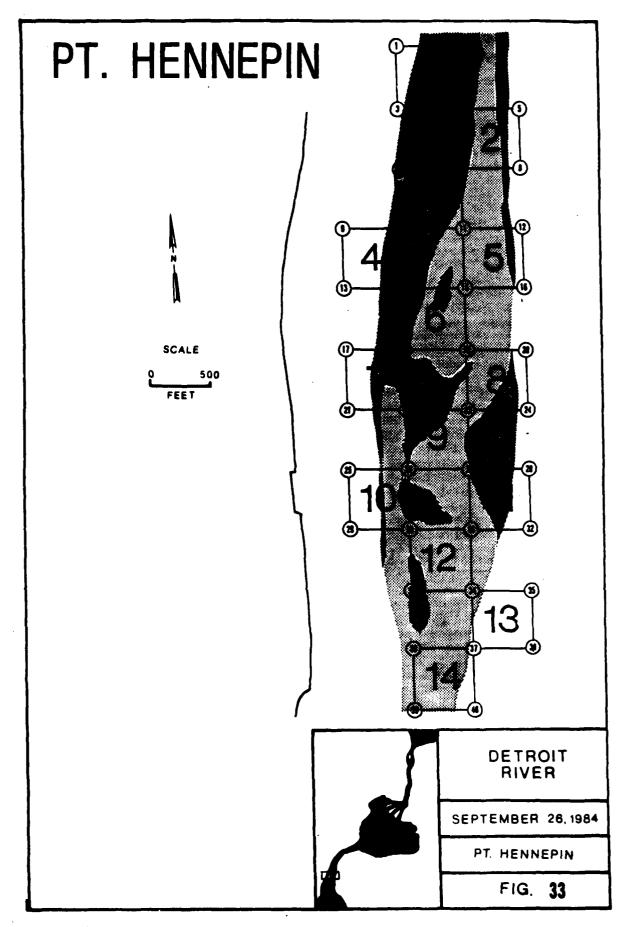


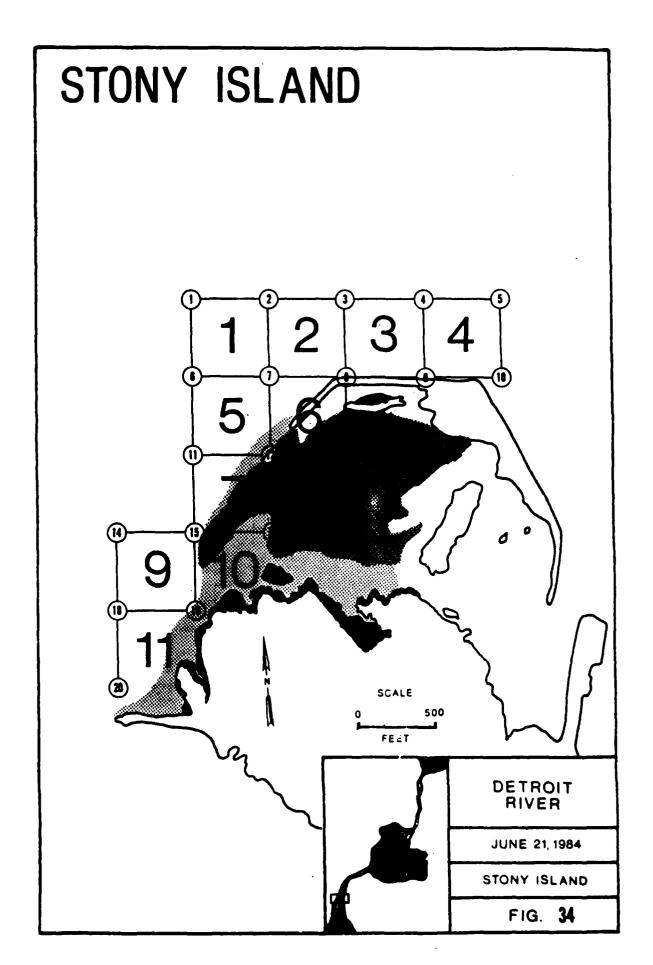


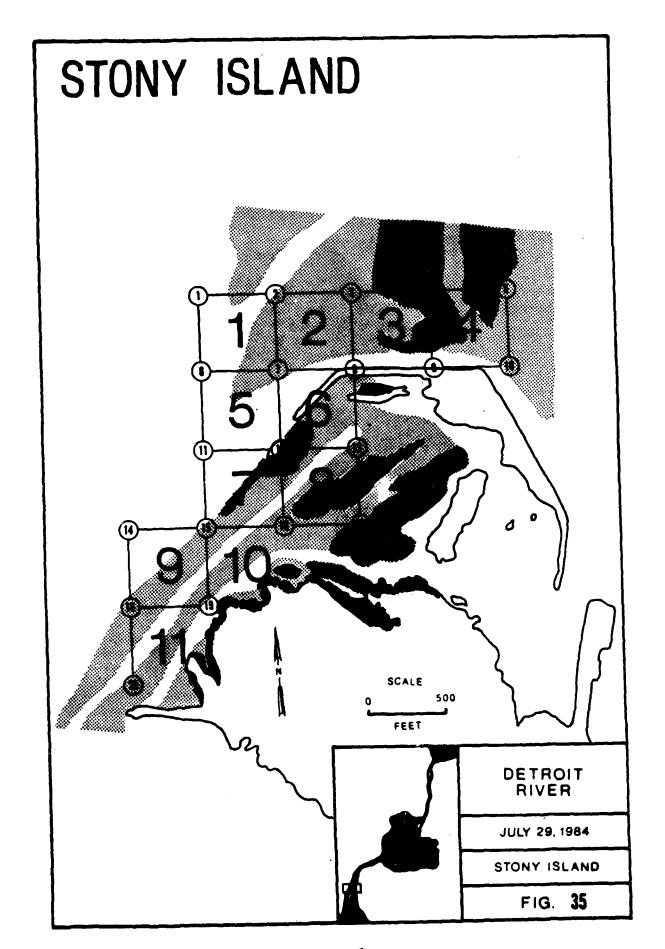


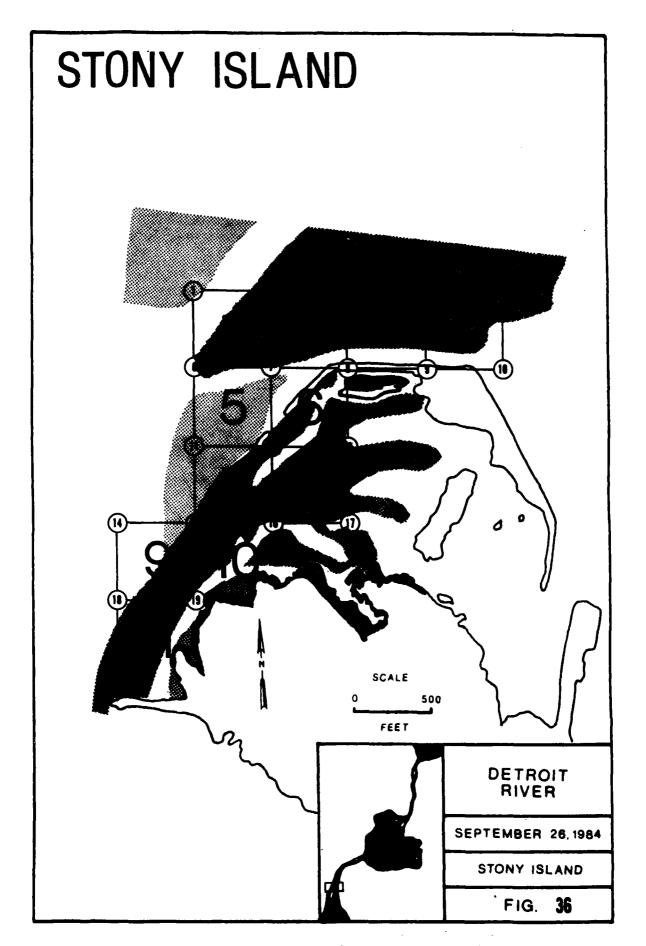
0-31











## APPENDIX P

ANOVA Tables for Macrophytes

7

A PROBLEM BOWN STORY

e a la comprese de  comprese del comprese de la comprese del la comprese de la c

## ANALYSIS OF VARIANCE TABLES

## ANALYSIS OF VARIANCE PROCECURE

| CEFENCENT VARIABLE | PCCT E1C     |                |            |        |         |
|--------------------|--------------|----------------|------------|--------|---------|
| SCLFCE             | . <b>E</b> F | SUM OF SQUARES | PEAR S     | CLARE  | F VALLE |
| FCCEL              | ES           | 5155.14757227  | 102.511    | 177457 | 27.95   |
| ERRCR              | 160          | 662.63176175   | 3.682      | 235879 |         |
| CCFFECTEC TCT4L    | 265          | 5621.57575462  |            |        |         |
| SCLECE             | CF           | ANCVA SS       | F VALLE    | FR F   |         |
| YELR               | 1            | 35.08038701    | 5.53       | C.CC23 |         |
| ACATH              | į            | 686.66556758   | 53.24      | c.ccc1 |         |
| YEARARCHTH         | i            | 221.01202626   | .31.37     | c.ccc1 |         |
| STATICA            | 14           | 5714.07136513  | 11C.E4     | c.ccc1 |         |
| YEAF4STATION       | 14           | 701.16014105   | 13.60      | c.ccci |         |
| ACATE 457471CA     | žE           | 1116.03300662  | 10.82      | c.ccc1 |         |
| YEARAPENTHASTATION | 2.6          | 675.12644427   | 6.55       | (.(()  |         |
|                    | FR F         | R-SCLARE       | C. 4.      |        |         |
|                    | c.ccc1       | C.532515       | 25.6915    |        |         |
|                    | ACCT FSE     | PCG            | TEIC PEAR  |        |         |
|                    | 1.51855773   | <b>!</b>       | 7.46524205 |        |         |

## LCCATION=FASK ANALYSIS OF VARIANCE PROCECUPE

| 1211CH<br>YE&F#ST&TICA<br>FCNTF#ST&TICN | 1C<br>2C       | 201.22654707<br>750.05556782                 | 4.16<br>5.45           | (.(001                     |         |
|---|----------------|--|------------------------|----------------------------|---------|
| YERRAPCATE<br>STATICA<br>YERRASTATICA   | 1C<br>1C       | 105.06656365<br>313.76674054<br>301.32654707 | 4.23<br>4.16           | C.CCC1                     |         |
| YEER<br>PCNTH                           | 1<br>2<br>2    | 6.62286819<br>2410.10612146                  | (.54<br>225.40<br>7.25 | C.3332<br>C.CCC1<br>C.CC1C |         |
| SCLACE                                  | CF             | ANCVA SS                                     | F VALLE                | to E                       |         |
| CCRRECTEC TCTAL                         | 157            | 6355.63060257                                |                        |                            |         |
| ERRCR                                   | 122            | 556.11818124                                 | 7.24                   | 331955                     |         |
| SCLACE .                                | 65             | 5355.51242132                                | £3.C6                  | 5421E7                     | 11.47   |
| CEPENCENT VARIABLE                      | FCCT EIC<br>EF | SUM OF SQLARES                               | PEAN                   | SCLARE                     | F VALUE |

permit fully legible reproduction

## ANALYSIS OF VARIANCE TABLES

|      |             | LC | Ç A | IICK | RESS  |         |    |
|------|-------------|----|-----|------|-------|---------|----|
| LAAI | <b>.</b> (1 | <  | CE  | LAR  | IANCE | FRCCECU | FE |

| CEFENCENT VARIABLE  | RCCT EIC  |  |            |                            |         |
|---|---|--|------------|----------------------------|---------|
| SCLFCE  | CF  | SUM OF SCLARES   | PEAN       | SCLARE                     | F VALUE |
| FCEEL   | <b>5</b> 2                                      | 4100.70653026  | 11.31      | 1 82887                    | 8.46    |
| EFFCF   | 108   | 567.20106211   | 5.14       | 167669                     |         |
| CCFRECTED TETAL   | 161   | 5CEE.CCEC1227  |            |                            |         |
| SCLACE  | CF  | ANOVA 55   | F VALLE    | fR F                       |         |
| YEAR PCNIP YEARAPCNIP SIATICN YEARASTATICN PCNIP OSTATICN YEARAPCNIP OSTATICN | 1<br>2<br>2<br>8<br>8<br>16<br>16<br>16<br>FF F | 24C.?61925E<br>17C7.12165611<br>424.96654166<br>517.43524132<br>426.57452375<br>252.05613212<br>475.17420046<br>R-SQUARE | 6.CC       | C.CCC1<br>C.CCC1<br>C.CCC1 |         |
|   | RCCT #SE  |  | EID FEAN   |                            |         |
|   | 3.02252058                                      | 11   | 1.52669155 |                            |         |

## LCCATICA = PELLE

#### ANALYSIS OF VARIANCE PROCECURE

| CEFENCENT VARIABLE  | PCCT PIC   |                |            |         |         |
|---------------------|------------|----------------|------------|---------|---------|
| SCLPCE              | C F        | SLM OF SQLARES | PEAN       | SCLARE  | F VALUE |
| FCCEL               | <b>5</b> 5 | 2227.61042562  | 56.57      | 305830  | 14.36   |
| EFFCF               | 120        | 472.65366452   | 3.93       | E7EC70  |         |
| CERFECTEE TETAL     | 175        | 3610.46412413  |            |         |         |
| 30AJ02              | C.F        | ANCVA SS       | F VALLE    | FR F    |         |
| YEAR                | 1          | 7.40264050     | 1.66       | C.173C  |         |
| PCATE               | i          | 1146.19819793  | 145.50     | C. CCC1 |         |
| YESFMPCNTH          | i          | 240.02433606   | 20.47      | 0.0001  |         |
| STATION             | ç          | 1208.67012177  | 24.10      | C.CCC1  |         |
| <b>\E</b>           | 5          | 62.46172419    | 2.35       | C.C175  |         |
| FCRTH#STATION       | 18         | 270.10486226   | 5.22       | C. CCC1 |         |
| YEARANCHTH ASTATICA | · 16       | 781.9285554C   | 3.9€       | C.CCC1  |         |
|                     | FR F       | R-SCLARE       | C.V.       |         |         |
|                     | C.CCC1     | 0.875555       | 21.5536    |         |         |
|                     | PCCT ►SE   | 400            | T EIO MEAN |         |         |
|                     | 1.98462616 |                | 5.20789866 |         |         |

Copy available to DTIC does not permit fully legible reproduction

## ANALYSIS OF VARIANCE TABLES

| , a   |                               |                | LCCATICNEFIHER  | NEFIN                |
|---|-------------------------------|----------------|---|----------------------|
|   |                               | ANAL           | STAIRAL AS 2124   | E FRCCECURE          |
| CEFENCENT VARIABLE  | ACCT EIC                      |                |   |                      |
| SCURCE  | CF                            | SLM OF SCLARES | PEAR SCLE   | FE F VILLE           |
| PCCEL   | £3                            | 2225.26256227  | 26.658626   | 29 5.31              |
| ERFCR   | 168                           | ESC.17E52742   | 5.060586  | 47                   |
| CCFFECTED TOTAL   | . 251                         | 2075.46110570  |   |                      |
| SCLACE  | C F                           | ANCVA SS       | F VALLE FR  | F                    |
| TELP PCNTH YELPOPCHTH STATICA YELPOSTATICA PCNTH-OSTATICA YELPOSTATICA PCNTH-OSTATICA | 1 2 2 13 12 26 26 FF F 0.0001 | ' RCC1         | 72.56 C. 3.33 C. 6.02 C. 3.06 C. 2.72 C. 2.62 C. C.v. 26.7264 | C38C<br>CCC1<br>CCC5 |
|   | 2.24957473                    | 7              | 1.62632353  |                      |

| -   |   |   | TOTALL  | N#STLAY   |         |
|---|---|---|---|---|---------|
|   |   | LANA  | . YSIS CF VAR   | IANCE FREE  | ECLFE   |
| CEFENCENT VARIFELE  | PCCT EIC                                |   | •   |   |         |
| SCLECE  | . EF                                    | SUM OF SQUARES  | PEAR  | SCLAPE  | F WALLE |
| +CCEL   | ;;                                      | \$142.17876615  | £7.15   | 557231  | 10.55   |
| ERECR   | 120                                     | 550.55041217  | E.25  | 752010  |         |
| CERRECTEE TETAL   | 175                                     | 6122.12517622   |   |   |         |
| SCLPCE  | CF                                      | 22 AVONA  | F VALLE   | FR F  |         |
| YEAR<br>PCNIM<br>YEARAPCNIM<br>SIATICN<br>YEARASIATICN<br>PCNIMASTATICN<br>YEARAPCNIMASTATICN | 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 4E.9145(467<br>12C5.C6547674<br>16.45111267<br>2266.4CC56654<br>212.47126517<br>1127.62C72246<br>255.555CC27C<br>R-SCLARE<br>C.626427 | 5.52<br>12.21<br>1.CC<br>3C.45<br>2.87<br>7.55<br>1.75<br>C.V.<br>25.28CE | C.Cl64<br>C.CQC1<br>C.2715<br>C.CQC1<br>C.CQA3<br>C.CQC1<br>C.CQSFE |         |
|   | FCCT PSE<br>2.87365971                  |   | .3665622E   |   |         |

Copy available to DTIC does not permit fully legible reproduction

#### APPENDIX O

## Catch Data for Hoop Nets

Life stage designation as follows:

0 - fish in the first year of life (young-of-the-year);
I - fish in the second year of life (yearlings);
I+ - fish in the second or later year of life;
II+ - fish in the third or later year of life.

[Note: by convention, fish are assumed to pass into the next year of life on January 1. All ages were drived from lengths, as reported by Trautman (1981).]

| JOPNE 1 | CATCH | HOOPNET CATCH DATA |          |      | VEGETATION      | T10N      |   |   | F.1          | FISH                        |                                    |
|---------|-------|--------------------|----------|------|-----------------|-----------|---|---|--------------|-----------------------------|------------------------------------|
| DATE    | CX i  | RIVER              | LOCATION | STA. | DOMINANT        | DENSITY   | SPECIES   | LIFE                                    | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)         | LENGTH<br>RANGE (NM)               |
| 5/23/83 | ST.   | ST. CLAIR          | STAG     | -    | CHARA SPP.      | FOW.      | STRIPED SHINER  | 11+                                     | 2            | 13                          | 82- 92                             |
|         |       |                    |          | 7    | ELODEA CANADENS | MED.      | NO FISH CAUGHT  | <br>                                    |              |                             |                                    |
|         |       |                    |          | 6    | NO VEGETATION   | 0         | RAINBOW SMELT<br>RAINBOW SMELT<br>BLUEGILL                                | 1111                                    |              | 22 22                       | 011                                |
|         |       |                    |          | 4    | NO VEGETATION   | 0         | RAINBOW SMELT<br>RAINBOW SMELT<br>TROUT PERCH<br>WHITE SUCKER<br>ROCKBASS | ++++                                    | 9            | 230<br>20<br>17<br>640<br>6 | 109-151<br>169<br>128<br>457<br>72 |
|         |       |                    | FAWN     | -    | CHARA SPP.      | AQ1       | RAINBOW SMELT   | -                                       | -            | 2                           | 99                                 |
|         |       |                    |          | 7    |                 | TON.      | NO FISH CAUGHT  |   |              |                             |                                    |
|         |       |                    |          | 6    |                 | 0         |   |   | !            |                             |                                    |
| •       |       |                    |          | 4    | NO VEGETATION   | 0         | FISH  | 1 | !            |                             |                                    |
|         |       |                    | RUSSELL  | -    | NO VEGETATION   | 0         | NO FISH CAUGHT  | 1                                       | ]<br>        |                             |                                    |
|         |       |                    |          | 7    | NO VEGETATION   | 0         | NO FISH CAUGHT  | !<br>!                                  | i<br>        |                             |                                    |
|         |       |                    |          | 6    | CHARA SPP.      | רסא       | SPOTTAIL SHINER<br>YELLOW PERCH   | 111+                                    | - 50         | 200<br>6                    | 88-109<br>86                       |
| 1       |       | 1                  |          | 4    | CHARA SPP.      | <b>10</b> | NO FISH CAUGHT  | !<br>!<br>!                             | 1            | !<br>!<br>!<br>!            | <br>                               |

| APPENDIX<br>HOOPNET C | APPENDIX<br>Hoopnet Catch Data |          |        |     | VEGETATION                                    | NO       |  |   | FISH         | Į.                    |   |
|-----------------------|--------------------------------|----------|--------|-----|---|----------|--|---|--------------|-----------------------|---|
| DATE                  | RIVER                          | LOCATION | STA.   | ت   | DOMINANT<br>TAXA D                            | DENSITY  | SPECIES  | LIFE                                    | TOTAL<br>No. | TOTAL<br>WT.<br>(G)   | LENGTH<br>RANGE (MM)                          |
| 5/25/83               | DETROIT                        | BELLE    | -      | 2   | NO VEGETATION                                 | 0        | NO FISH CAUGHT   |   |              |                       | <br>  |
|                       |                                |          | 8      | ş   | NO VEGETATION                                 | 0        | GIZZARD SHAD   |   | -:           | 0                     | 106   |
|                       |                                |          |        |     |   |          | RAINBOW SMELT<br>STONECAT  | . ÷I                                    | <u>•</u> -   | 36<br>220             | 71- 86<br>260                                 |
|                       |                                |          |        |     |   |          | EMERALD SHINER   | ÷                                       | -            | -                     | 40  |
|                       |                                |          |        |     |   |          | BLUEGILL<br>YELLOW PERCH   | <b>± ±</b>                              |              | 6                     | 133   |
|                       |                                |          | 6      | Ŧ   | HETERANTHERA DUB                              | MED.     | YELLOW PERCH<br>YELLOW PERCH   | +11                                     | ~6           | 113                   | 88<br>107-175                                 |
|                       |                                |          | 4      | 1   | HETERANTHERA DUB                              | MED.     | ROCKBASS   |   | 7            | 31                    | 88- 92  |
|                       |                                |          |        |     |   |          | ROCKBASS<br>YELLOW PERCH   | <u>+ + 1</u>                            |              | 250                   | 220<br>153                                    |
|                       |                                | HENNEPIN | -<br>- | 2   | NO VEGETATION                                 | 0        | SPOTTAIL SHINER<br>HORNYHEAD CHUB<br>YELLOW PERCH                        | † † †                                   | 9-6          | 70<br>18<br>68        | 95-125<br>112<br>144-146                      |
|                       |                                |          | a      | ş   | NO VEGETATION                                 | 0        | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                                     | ++1                                     | - 0, -       | 18<br>870<br>60       | 107<br>128-205<br>171                         |
|                       |                                |          | 6      | Ŧ   | <u>.                                     </u> | AO7      | YELLOW PERCH   | 11+                                     | -            | 34                    | 148   |
|                       |                                |          | 4      | Ħ   | HETERANTHERA DUB                              | <b>*</b> | NO FISH CAUGHT   |   |              |                       |   |
|                       |                                | STONY    | -      | 5   | POT. CRISPUS                                  | HIGH.    | SPOTTAIL SHINER<br>VELLOW PERCH  | +11                                     | <b>7</b> -   | 21<br>44              | 94-102<br>157                                 |
|                       |                                |          | 7      | P01 | POT. CRISPUS                                  | H91H     | RAINBOW SMELT<br>SPOTTAIL SHINER<br>ROCKBASS<br>ROCKBASS<br>YELLOW PERCH | + | -4640        | 31<br>41<br>43<br>283 | 135<br>97-128<br>41-106<br>124-185<br>118-165 |
|                       |                                |          | 6      | 2   | VEGETATION                                    | 0        | ROCKBASS   | 11+                                     | 4            | 245                   | 144-231                                       |
|                       |                                |          | 4      | 2   | NO VEGETATION                                 | o        | RAINBOW SMELT<br>RAINBOW SMELT<br>SPOTTAIL SHINER<br>YELLOW PERCH        | +++                                     | a-a-         | 30<br>15<br>23<br>69  | 115-127<br>166<br>97-110<br>176               |

| APPENDIX<br>HOOPNET | APPENDIX<br>Hoopnet Catch Data |          |          | VEGETATION       | T10N    |   |         | FISH         | IJ                          |   |
|---------------------|--------------------------------|----------|----------|------------------|---------|---|---------|--------------|-----------------------------|---|
| DATE                | RIVER                          | LOCATION | STA.     | DOMINANT         | DENSITY | SPECIES   | LIFE    | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)         | LENGTH<br>RANGE (MM)                          |
| 6/20/83             | ST. CLAIR                      | STAG     | -        | CHARA SPP.       | MOT.    | NO FISH CAUGHT  | <br>    |              | <br>                        |   |
|                     | •                              |          | 7        | NO VEGETATION    | 0       | BLUEGILL  | +11     | -            | 118                         | 183   |
|                     |                                |          | 6        | CHARA SPP.       | AO 1    | RAINBOW SMELT<br>STRIPED SHINER<br>ROCKBASS                             | ++      |              | 250                         | 111<br>84- 97<br>213                          |
|                     |                                |          | 4        | NO VEGETATION    | 0       | RAINBOW SMELT<br>STRIPED SHINER<br>HORNYHEAD CHUB                       | +++     | 40-          | 4 00 4<br>0 10 0            | 125-143<br>82- 86<br>142                      |
|                     |                                | MARN     | -        | POT. RICHARDSONI | FOR     | RAINBOW SMELT<br>HORNYHEAD CHUB<br>YELLOW PERCH<br>YELLOW PERCH         |         | - O 80 -     | 168<br>451<br>37            | 123<br>97-128<br>77-105                       |
|                     |                                |          | 7        | NO VEGETATION    | 0       | NO FISH CAUGHT  |         |              |                             |   |
|                     |                                |          | 6        | POT. NARROW      | LOW     | NO FISH CAUGHT  | <br>    |              |                             |   |
| •                   |                                |          | 4        | NO VEGETATION    | 0       | RAINBOW SMELT<br>TROUT PERCH<br>WHITE SUCKER<br>YELLOW PERCH            |         | a            | න ට රී හ                    | 61-117<br>113<br>440<br>90                    |
|                     |                                | RUSSELL  | -        | POT. NARROW      | MOT     | HORNYHEAD CHUB  | + #     | -            | 5                           | <u>8</u>                                      |
| ,                   |                                |          | 8        | NO VEGETATION    | 0       | HORNYHEAD CHUB<br>ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                  | 011111  | -00-4        | 172<br>172<br>190           | 87<br>97 - 98<br>113 - 180<br>65<br>125 - 179 |
|                     |                                |          | <b>е</b> | POT. NARROW      | LOW     | BOWFIN<br>STRIPED SHINER<br>ROCKBASS<br>LARGEMOUTH BASS<br>YELLOW PERCH | † 1 0 H | -4           | 400<br>66<br>84<br>29<br>35 | 532<br>90-123<br>78<br>98<br>90<br>137        |
|                     |                                |          | 4        | NO VEGETATION    | o       | MOTTLED SCULPIN   | +1      | -            | g                           | 7.1   |

| APPENDIX<br>HOOPNET CATCH DATA | АТСН БАТА |           |      | VEGETATION    | T 10N    |  |         | FISH         | 3   |  |
|--------------------------------|-----------|-----------|------|---------------|----------|--|---------|--------------|---|--|
| DATE                           | RIVER     | LOCATION  | STA. | DOMINANT      | DENSITY  | SPECIES  | LIFE    | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)                         | LENGTH<br>RANGE (MM)                                 |
| 6/27/83                        | DETROIT   | BELLE     | -    | NO VEGETATION | 0        | ROCKBASS   | 111     | <b>O</b> 10  | 111   | 61-98  |
|                                |           |           | 7    | POT. CRISPUS  | AO1      | ROCKBASS<br>ROCKBASS   | +11     | 40           | 162   | 59-85  |
|                                |           |           |      | LLA HYAL      | HIGH     | NO FISH CAUGHT   |         |              | -<br>-<br>-<br>-<br>-<br>-<br>-             | ,<br>,<br>,<br>,<br>,                                |
|                                |           | 1         | 4    | NO VEGETATION |          | !  | +11     | -            | 150   | 191  |
|                                |           | HENNEP IN | -    |               | MED.     | NO FISH CAUGHT   |         |              |   | )<br>  |
|                                |           |           | 6    | NO VEGETATION | 0        | BIGMOUTH BUFFALO<br>SPOTTAIL SHINER<br>YELLOW PERCH  | ***     | -100-        | 800<br>57<br>37                             | 370<br>95-113<br>85- 92<br>152                       |
|                                |           |           | 6    | POT. NARROW   | MED.     | ROCKBASS   | ±11     | 2            | 150   | 157-164  |
|                                |           | 1         | 4    | NO VEGETATION | 0        | SPOTTAIL SHINER<br>YELLOW PERCH  | ***     | 62           | 150   | 101-108  |
|                                |           | STONY     | -    | POT. CRISPUS  | HIGH     | WHITE PERCH<br>FRESHWATER DRUM<br>ROCKBASS<br>YELLOW PERCH                                       |         | 0            | 680<br>170<br>26                            | 85<br>373<br>199<br>96-100                           |
|                                |           |           | 6    | ETAT          | 0        | ו ער   | + 1 1 1 | - 6-         | 3400  | 620<br>209-225<br>97                                 |
|                                |           |           | e    | POT. CRISPUS  | <b>.</b> | CARP<br>BLACK REDHORSE<br>ROCKBASS<br>ROCKBASS   |         |              | 1300<br>900<br>18<br>100                    | 448<br>448<br>88<br>161                              |
| ,                              |           |           | 4    | NO VEGETATION | o        | STONECAT<br>WHITE PERCH<br>WHITE BASS<br>WHITE BASS<br>WHITE BASS<br>SPOTTAIL SHINER<br>ROCKBASS | + ++ +  | -04          | 23<br>120<br>103<br>102<br>102<br>14<br>120 | 75<br>138-169<br>209<br>158<br>241-283<br>107<br>102 |

| DOMINANT TAXA DOWINANT TAXA HARA SPP. LOW O VEGETATION O O VEGETATION O VEGETATION OT. PRAELONGIS MED.   | APPENDIX<br>HOOPNET ( | APPENDIX<br>Hoopnet Catch Data |   |      | VEGETATION       |         |                |              | H.             | FISH                |   |
|--|-----------------------|--------------------------------|---|------|------------------|---------|----------------|--------------|----------------|---------------------|---|
| 2 NO VEGETATION O VELLOW PERCH I 1 13  3 NO VEGETATION O VELLOW PERCH I 1 13  4 POT PRAELONGIS NED NO FISH CAUGHT  5 NO VEGETATION O NO FISH CAUGHT  6 NO VEGETATION O NO FISH CAUGHT  7 NO VEGETATION O NO FISH CAUGHT  8 NO VEGETATION O NO FISH CAUGHT  8 NO VEGETATION O NO FISH CAUGHT  9 NO VEGETATION O NO FISH CAUGHT  11  | DATE                  |                                | LOCATION                                | STA. | DOMINANT<br>TAXA | DENSITY | SPECIES        | LIFE         | TOTAL<br>NO.   | TOTAL<br>WT.<br>(G) | LENGTH<br>RANGE (MM)                              |
| 2 NO VEGETATION O VELLOW PERCH I 1 13 3 NO VEGETATION O NO FISH CAUGHT 4 POT. PRAELONGIS MED. NO FISH CAUGHT 7 POT. PRAELONGIS MED. NO FISH CAUGHT 8 NOCKBASS 11+ 1 26 8 NOCKBASS 11+ 2 364 1 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 3 253 14 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 20 683 14 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 20 683 16 NO VEGETATION O ROCKBASS II+ 10 10 110 17 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 21 66 18 VELLOW PERCH II+ 20 683 19 NO VEGETATION O ROCKBASS II+ 10 10 110 10 VELLOW PERCH II+ 21 348 11 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 21 1448 11 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 21 1448 12 NO VEGETATION O ROCKBASS II+ 66 13 NO VEGETATION O ROCKBASS II+ 10 10 10 14 POT. PRAELONGIS MED. COMMON SHINKR II+ 11 14 15 10 NO VEGETATION O ROCKBASS II+ 66 10 NO VEGETATION O ROCKBASS II+ 10 10 10 10 NO VEGETATION O ROCKBASS II+ 11 10 10 10 NO VEGETATION O ROCKBASS II+ 11 10 10 10 NO VEGETATION O ROCKBASS II+ 11 10 10 10 NO VEGETATION O ROCKBASS II+ 11 10 10 10 NO VEGETATION O ROCKBASS II+ 10 10 10 NO VEGETATION O ROCKBASS  | 7/25/83               |                                | STAG                                    | -    |                  | LOW     | YELLOW PERCH   | -            | -              | 60                  | 94  |
| 3 NO VEGETATION O NO FISH CAUGHT  4 POT. PRAELONGIS MED. NO FISH CAUGHT  5 POT. PRAELONGIS MED. NO FISH CAUGHT  7 POT. PRAELONGIS MED. NO FISH CAUGHT  8 NO VEGETATION O ALEWIFE  11   |                       |                                |   | 7    | NO VEGETATION    | 0       | YELLOW PERCH   | -            | -              | 5                   | 101   |
| 4 POT. PRAELONGIS MED. ALEWIFE II+ 1 16 1 POT. PRAELONGIS MED. ALEWIFE II+ 1 26 ROCKBASS II+ 4 215 ROCKBASS II+ 4 215 ROCKBASS II+ 4 215 ROCKBASS II+ 4 215 ROCKBASS II+ 3 344 1 3 NO VEGETATION O ROCKBASS II+ 3 253 VELLOW PERCH II+ 2 196 ROCKBASS VELLOW PERCH II+ 4 165 ROCKBASS II+ 18 1324 1 VELLOW PERCH II+ 1 19 50 ROCKBASS II+ 18 1324 1 VELLOW PERCH II+ 2 1 449 ROCKBASS II+ 18 1324 1 VELLOW PERCH II+ 2 1 149 ROCKBASS II+ 18 1324 1 VELLOW PERCH II+ 2 1 149 ROCKBASS II+ 18 19 ROCKBASS II+ 18 19 ROCKBASS II+ 19 10 ROCKBASS II+ 18 19 ROCKBASS II+ 19 10 ROCKBAS |                       |                                |   | 6    |                  | 0       | NO FISH CAUGHT |              |                |                     | <br>  |
| POT PRAELONGIS   NED   ALEWIFE   11   1   1   1   1   1   2  |                       |                                |   | 4    |                  | MED.    | NO FISH CAUGHT |              |                |                     | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1              |
| ## HORNYHEAD CHUB   11   1   27   ## POCKBASS   11   4   216   ## POCKBASS   11   4   216   ## POCKBASS   11   4   216   ## POT PRAELONGIS MED. HORNYHEAD CHUB   1   50   583   ## POT PRAELONGIS MED. HORNYHEAD CHUB   1   50   583   ## POT PRAELONGIS MED. HORNYHEAD CHUB   1   50   583   ## POT PRAELONGIS MED. HORNYHEAD CHUB   1   50   583   ## POT PRAELONGIS MED. HORNYHEAD CHUB   1   4   165   ## POT PRAELONGIS MED. HORNYHEAD CHUB   1   4   158   ## POT PRAELONGIS MED. HORNYHEAD CHUB   1   4   158   ## POT PRAELONGIS MED. COMMON SHINER   11   11   13   536   ## POT PRAELONGIS MED. COMMON SHINER   11   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   1   1   1   1   ## POT PRAELONGIS MED. COMMON SHINER   1   1   1   1   1   1   1   1   1   |                       |                                | FAWN                                    | -    | •                | MED.    |                |              |                | 16                  | 122   |
| POT PRAELONGIS   PROCH   11 + 21   27  |                       |                                |   |      |                  |         | HORNYHEAD CHUB | + + + 1      |                | 5 B                 | 126<br>26   |
| 2 NO VEGETATION O ROCKBASS II+ 2 36  3 NO VEGETATION O ALEWIFE II+ 3 344 1  4 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 23 657 1  1 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 23 657 1  1 POT. PRAELONGIS MED. HORNYHEAD CHUB II+ 23 657 1  2 NO VEGETATION O ROCKBASS II+ 18 1324 1  2 NO VEGETATION O ROCKBASS II+ 18 1324 1  4 POT. PRAELONGIS MED. COMMON FRICH II+ 21 1448 1  4 POT. PRAELONGIS MED. COMMON FRICH II+ 21 1448 1  5 NO VEGETATION O HORNYHEAD CHUB II+ 21 1448 1  4 POT. PRAELONGIS MED. COMMON FRICH II+ 23 323 1  4 POT. PRAELONGIS MED. COMMON FRICH II+ 23 323 1  5 NO VEGETATION O HORNYHEAD CHUB II+ 23 323 1  6 NO PUMPKINSED III+ 18 19 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10   |                       |                                |   |      |                  |         | ROCKBASS       | 1            |                | 27                  | 107   |
| 2 NO VEGETATION O ALEWIFE II+ 3 344 11 3 NO VEGETATION O ALEWIFE II+ 3 253 11 4 POT PRAELONGIS MED HORNYHEAD CHUB II+ 2 196 138 NCKBASS II+ 23 657 11 7 POT PRAELONGIS MED HORNYHEAD CHUB II+ 23 657 11 8 ROCKBASS II+ 18 1324 11 7 NO VEGETATION O ROCKBASS II+ 18 1324 11 7 NO VEGETATION O ROCKBASS II+ 18 1324 11 7 NO VEGETATION O ROCKBASS II+ 14 158 1448 14 7 POT PRAELONGIS MED COMMON SHINER II+ 21 1448 1448 1448 1448 1448 1448 1448 1   |                       |                                |   |      |                  |         | YELLOW PERCH   | +11          | 10             | 36                  | 113-118   |
| 3 NO VEGETATION O ALEWIFE  4 POT. PRAELONGIS MED. HORNYHEAD CHUB II 50 583  7 ELLOW PERCH II 4 668  7 YELLOW PERCH II 1 13 536  7 YELLOW PERCH II 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |                       |                                |   | 7    | NO VEGETATION    | 0       | ROCKBASS       | +11          |                | 344                 | 128-210   |
| 4         POT. PRAELONGIS         MED. HORNVHEAD CHUB         II         6         138           1         POT. PRAELONGIS         MED. HORNVHEAD CHUB         II         50         583           1         POT. PRAELONGIS         MED. HORNVHEAD CHUB         II         7         101           1         POT. PRAELONGIS         MED. HORNVHEAD CHUB         II         7         101           2         NO VEGETATION         O ROCKBASS         II         6         68           2         NO VEGETATION         O ROCKBASS         II         4         165           3         NO VEGETATION         O HORNVHEAD CHUB         II         13         346           4         POT. PRAELONGIS         MED. CDMMON SHINER         II         1         14         158           4         POT. PRAELONGIS         MED. CDMMON SHINER         II         1         1         1           4         POT. PRAELONGIS         MED. CDMMON SHINER         II         23         323           ROCKBASS         II         4         60         1           PUMPKINSED         II         4         60           PUMPKINSED         II         1         1   |                       |                                |   | 6    | NO VEGETATION    | 0       | ALEVIFE        |              | -              | 5                   | 148   |
| 4 POT. PRAELONGIS MED. HORNYHEAD CHUB I 6 138  11 2 196  12 NO VEGETATION O ROCKBASS  2 NO VEGETATION O HORNYHEAD CHUB I 7 101  1 POT. PRAELONGIS MED. HORNYHEAD CHUB I 7 101  2 NO VEGETATION O ROCKBASS  3 NO VEGETATION O HORNYHEAD CHUB I 7 10  110  111  12 101  14 10 100  110  111  11 10 10  110  1  |                       |                                |   | )    |                  | •       | YELLOW PERCH   | +11          | ю.             | 253                 | 130-235   |
| POT PRAELONGIS MED. HORNYHEAD CHUB   1 50 583   11   | •                     |                                |   | 4    |                  | MED     | HORNYHEAD CHUB | -            | 9              | 138                 | 94-128  |
| YELLOW PERCH II 50 583 YELLOW PERCH II+ 23 657 1 YELLOW PERCH II+ 7 101 ROCKBASS II+ 7 101 ROCKBASS II+ 7 101 YELLOW PERCH II+ 6 68 YELLOW PERCH II+ 13 536 1 YELLOW PERCH II+ 13 536 1 YELLOW PERCH II+ 13 536 1 YELLOW PERCH II+ 21 346 YELLOW PERCH II+ 21 449 1 YELLOW PERCH II+ 21 1449 1 YELLOW PERCH II+ 21 1449 1 YELLOW PERCH II+ 21 149 1 YELLOW PERCH II+ 21 149 1 YELLOW PERCH II+ 21 19 19 HORNYHEAD CHUB II+ 23 323 ROCKBASS II+ 4 660 1 YELLOW PERCH II+ 23 323 ROCKBASS II+ 4 660 1 YELLOW PERCH II+ 23 323 ROCKBASS II+ 4 660 1 YELLOW PERCH II+ 20 124   |                       |                                |   |      |                  |         | ROCKBASS       | +11          | 7              | 196                 | 123-170   |
| POT. PRAELONGIS MED. HORNYHEAD CHUB   1+ 7 101   |                       |                                |   |      |                  |         | YELLOW PERCH   | . :          | ဝှင်           | 583                 | 81-108  |
| POT. PRAELONGIS MED. HORNYHEAD CHUB   1+ 7 101   ROCKBASS  |                       |                                | 1 | ;    |                  | 1       |                | +11          | 23             | /69                 | 111-168<br>111-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1- |
| NO VEGETATION  |                       |                                | RUSSELL                                 | -    | POT. PRAELONGIS  | MED.    | HORNYHEAD CHUB | <b>±</b>     | 7              | 5                   | 97-133  |
| NO VEGETATION O ROCKBASS   |                       |                                |   |      |                  |         | ROCKBASS       | •            | - (            | = 8                 | 73  |
| NO VEGETATION O ROCKBASS 11+ 18 1324 1- 19 10 10 10 10 10 10 10 10 10 10 10 10 10  |                       |                                |   |      |                  |         | YELLOW PERCH   | +11          | 0 4            | 16.8<br>16.8        | 120-175   |
| NO VEGETATION O HORNVHEAD CHUB I+ 13 536 1  NO VEGETATION O HORNVHEAD CHUB I+ 21 346  ROCKBASS II+ 21 346  VELLOW PERCH I + 21 346  VELLOW PERCH II+ 21 1449  VELLOW PERCH II+ 21 1449  VELLOW PERCH II+ 21 1449  VELLOW PERCH II+ 21 149  VELLOW PERCH II+ 21 13  HORNVHEAD CHUB O I 10  HORNVHEAD CHUB I+ 23 323  ROCKBASS II+ 4 860  VELLOW PERCH II+ 20 1569  VELLOW PERCH II+ 20 1569   |                       |                                |   |      | NO VEGETATION    |         | DOCKBACE       | 114          | 4              | 1324                | 405218  |
| NO VEGETATION O HORNYHEAD CHUB I+ 21 346  NO VEGETATION O HORNYHEAD CHUB I+ 21 346  YELLOW PERCH II+ 21 1449  HORNYHEAD CHUB O I 10  HORNYHEAD CHUB I+ 23 323  ROCKBASS II+ 4 860  PUMPKINSEED II+ 4 860  YELLOW PERCH II+ 20 1569  YELLOW PERCH II+ 20 1569   |                       |                                |   | 4    |                  | •       | YELLOW PERCH   |              | 2 0            | 2                   | 86~107  |
| NO VEGETATION O HORNYHEAD CHUB I+ 21 346  ROCKBASS II+ 6 600 YELLOW PERCH I 14 158 YELLOW PERCH II+ 21 1449 YELLOW PERCH II+ 21 1449 YELLOW PERCH II+ 21 1449 HORNYHEAD CHUB O 1 10 HORNYHEAD CHUB O 1 10 HORNYHEAD CHUB I+ 23 323 ROCKBASS II+ 4 860 PUMPKINSEED II+ 1 60 YELLOW PERCH II+ 20 1561  |                       |                                |   |      |                  |         | YELLOW PERCH   | +11          | <del>1</del> 3 | 536                 | 110-190   |
| YELLOW PERCH   14 158   YELLOW PERCH   1   |                       |                                |   | 6    | NO VEGETATION    | 0       | HORNYHEAD CHUB | +1           | 21             | 346                 | 91-132  |
| YELLOW PERCH I 14 158  YELLOW PERCH II+ 21 1448 1  POT. PRAELONGIS MED. CDMMON SHINER II+ 1 13  HORNVHEAD CHUB O 1 10  HORNVHEAD CHUB I+ 23 323  ROCKBASS I 1 19  ROCKBASS II+ 4 860 1  YELLOW PERCH I 18 211  VELLOW PERCH I 18 211   |                       |                                |   | ,    |                  | ı       | ROCKBASS       | +11          | 9              | 9                   | 128-180   |
| # # # # # # # # # # # # # # # # # # #  |                       |                                |   |      |                  |         | YELLOW PERCH   |              | 4 :            | 158                 | 90-106  |
| POT. PRAELONGIS MED. COMMON SHINER II+ 1 13 HORNYHEAD CHUB 0 1 10 HORNYHEAD CHUB I+ 23 323 ROCKBASS I 1 19 ROCKBASS II+ 4 860 1 YELLOW PERCH I 18 211  |                       |                                |   |      | 1 1 1 1          |         | TELLUW PEKCH   | <u> </u>     |                | D +                 | 0.7-11  |
| CHUB I+ 23 323<br>  CHUB I+ 23 323<br>  I  |                       |                                |   | 4    |                  | MED.    | COMMON SHINER  | <b>†</b> I ( |                | t i                 | <b>5</b>  |
| ED 11+ 23 323<br>11+ 4 860 1<br>ED 11+ 1 60<br>RCH 1 18 211<br>RCH 1 70 1269 1   |                       |                                |   |      |                  |         | HORNYHEAD CHUB | o :          | - 8            | 2 ;                 | 9 4 6   |
| ED II+ 4 860 1<br>ED II+ 1 60<br>RCH I 18 211  |                       |                                |   |      |                  |         | _              | <u>.</u>     | ş -            | 323<br>19           | 96  |
| II+ 1 60<br>H I 18 211<br>H II+ 20 1269 1  |                       |                                |   |      |                  |         | ROCKBASS       | +11          | 4              | 960                 | 142-245   |
| PERCH I 18 211   |                       |                                |   |      |                  |         | PUMPKINSEED    | +11          | <del>-</del> ; | 9                   | 131   |
|  |                       |                                |   |      |                  |         | YELLOW PERCH   | . :          | ج<br>ق ز       | 112                 | 92-108  |

Q-5

| APPENDIX<br>HOOPNET | APPENDIX<br>HOOPNET CATCH DATA |          |      | VEGETATION       | NOL          |   |      | FI           | FISH                         |   |
|---------------------|--------------------------------|----------|------|------------------|--------------|---|------|--------------|------------------------------|---|
| DATE                | RIVER                          | LOCATION | STA. | DOMINANT<br>TAXA | DENSITY      | SPECIES   | LIFE | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)          | LENGTH<br>RANGE (MM)                          |
| 8/ 1/83             | DETROIT                        | BELLE    | -    | VALLISNERIA AMER | HOIT         | VELLOW PERCH  | 1    | <b>6</b> -   | 689                          | 91-106  |
|                     |                                |          | 6    | NO VEGETATION    | o            | ROCKBASS<br>ROCKBASS<br>BLUEGILL<br>YELLOW PERCH            | +++  | w & 4        | 43<br>697<br>30<br>256       | 83-102<br>120-240<br>118<br>110-202           |
|                     |                                |          | 6    | MYRIO. EXALBESC  | BED.         | ROCKBASS<br>ROCKBASS<br>WHITE CRAPPIE<br>YELLOW PERCH       | +++  | KD           | 19<br>216<br>150<br>69<br>78 | 100<br>210<br>205<br>205<br>99-109<br>115-122 |
|                     |                                |          | 4    | NO VEGETATION    | 0            | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                        | +11  | - 9 -        | 8 16<br>1 1                  | 82<br>112-220<br>110                          |
|                     |                                | HENNEPIN | -    | HETERANTHERA DUB | HOIT<br>HOIT | CHANNEL CATFISH<br>ROCKBASS<br>YELLOW PERCH<br>YELLOW PERCH | +111 | 2022         | 870<br>190<br>139            | 255-380<br>110-174<br>101-109<br>111-195      |
|                     |                                |          | 7    | NO VEGETATION    | 0            | SPOTTAIL SHINER<br>PCCKBASS<br>YELLOW PERCH<br>YELLOW PERCH | ++ + | e – ro ≟     | 77<br>40<br>61<br>254        | 97-111<br>126<br>96-106<br>110-273            |
|                     |                                |          | е !  | VALLISNERIA AMER | HIGH         | ROCKBASS<br>YELLOW PERCH<br>YELLOW PERCH                    | + 11 | -64          | 33<br>33                     | 143<br>83~102<br>113-115                      |
|                     |                                |          | 4    | NO VEGETATION    | 0            | YELLOW PERCH  | +11  | 4            | 167                          | 114-187                                       |

| APPEND1X<br>HOOPNET ( | APPENDIX<br>Hoopnet Catch Data |          |      |                  | VEGETATION | NOI     |   |       | H            | FISH                          |   |
|-----------------------|--------------------------------|----------|------|------------------|------------|---------|---|-------|--------------|-------------------------------|---|
| DATE                  | RIVER                          | LOCATION | STA. | DOMINANT<br>TAXA | <b>1</b> 2 | DENSITY | SPECIES   | LIFE  | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)           | LENGTH<br>RANGE (MM)                            |
| 8/ 1/83               | 1                              | STONY    | -    | MYRIO. EXALBESC  | EXALBESC   | HIGH    | HIGH YELLOW BULLHEAD<br>BROWN BULLHEAD<br>YELLOW PERCH          | +111  |              | 190<br>195<br>141             | 234<br>257<br>221                               |
|                       |                                |          | 8    | NO VEGETATION    | ATION      | 0       | HORNYHEAD CHUB<br>ROCKBASS                                      | + 11  | <b>8</b> -   | 29                            | 103-134   |
|                       |                                |          | m    | MYRIO. EXALBESC  | XALBESC    | MED.    | CHANNEL CATFISH CHACK REDHORSE HORNYHEAD CHUB ROCKBASS ROCKBASS | ****  | 468          | 220<br>530<br>78<br>43<br>258 | 280<br>383<br>97 - 131<br>66 - 104<br>149 - 210 |
|                       |                                |          | 4    | NO VEGETATION    | ATION      | 0       | CHANNEL CATFISH HORNYHEAD CHUB ROCKBASS ROCKBASS YELLOW PERCH   | + + + |              | 680<br>21<br>21<br>25<br>399  | 343<br>116<br>102<br>180-190<br>96              |

| HOOPNET ( | HOOPNET CATCH DATA |          |      | VEGETATION       | TION    |                 |          | FI             | FISH                |                      |
|-----------|--------------------|----------|------|------------------|---------|-----------------|----------|----------------|---------------------|----------------------|
| DATE      | RIVER              | LOCATION | STA. | DOMINANT         | DENSITY | SPECIES         | LIFE     | TOTAL<br>NO.   | T0TAL<br>WT.<br>(G) | LENGTH<br>RANGE (MM) |
| 6/83      | ST. CLAIR          | STAG     | -    | NO VEGETATION    | 0       | WHITE SUCKER    | +1       | -              | 16                  | 118                  |
|           |                    |          |      |                  |         | HORNYHEAD CHUB  | 0        | 8              | <b>6</b>            | 86- 89               |
|           |                    |          |      |                  |         | HORNYHEAD CHUB  | -        | 27             | 383                 | 95-126               |
|           |                    |          |      |                  |         |                 | <b>.</b> | 93             | 319                 | 76-109               |
|           |                    |          | i    | 1                | 1       | VELLOW PERCH    | +11      | *              | 489                 | 110-215              |
|           |                    |          | 8    | POT. PRAELONGIS  | MED.    | VELLOW PERCH    | -        | 7              | 24                  | 103-105              |
|           |                    |          |      |                  |         | VELLOW PERCH    | +11      | -              | 500                 | 226                  |
|           |                    |          | ၉    | NO VEGETATION    | ٥       | NORTHERN PIKE   | <u>+</u> | -              | 1500                | 610                  |
|           |                    |          |      |                  |         | WHITE SUCKER    | 0        |                | 4                   | 97-100               |
|           | -                  |          |      |                  |         |                 | ÷        | , <del></del>  | 2                   | 128                  |
|           |                    |          |      |                  |         | ROCKBASS        | +11      | . 0            | 74                  | 123-130              |
|           |                    |          |      | ;                |         | BLACK CRAPPIE   | ÷        | · <del>-</del> | 120                 | 198                  |
|           |                    |          | 4    | POT. RICHARDSONI | MED.    | SPOTTAIL SHINER | +11      | -              | 9                   | 112                  |
|           |                    |          |      |                  |         | HORNYHEAD CHUB  | ÷        | ō              | 178                 | 109-126              |
|           |                    |          |      |                  |         | ROCKBASS        | -        | ~              | 16                  | 75- 81               |
|           |                    |          |      |                  |         | ROCKBASS        | 11+      | 8              | 112                 | 142-143              |
|           |                    |          |      |                  |         | PUMPKINSEED     | +11      | -              | <del>+</del>        | 16                   |
|           |                    |          |      |                  |         |                 | -        | 7.1            | 973                 | 88-109               |
|           |                    | 1 1 1    |      |                  |         | VELLOW PERCH    | +11      | 2              | 1412                | 110-265              |
|           |                    | FAWN     | -    | POT. RICHARDSONI | MED.    | ROCKBASS        | -        | 6              | 99                  | 100-105              |
|           |                    |          |      |                  |         | ROCKBASS        | +11      | ø              | 516                 | 112-120              |
|           |                    |          | 1    |                  |         | YELLOW PERCH    | 11+      | -              | 12                  | 112                  |
| •         |                    |          | 2    | NO VEGETATION    | 0       | ROCKBASS        | žI       | 6              | 146                 | 133-139              |
|           |                    |          | 6    | ¥                | MED.    | ROCKBASS        | -        | -              | <b>6</b>            | 96                   |
|           |                    |          |      |                  |         | ROCKBASS        | 11+      | ID.            | 513                 | 111-211              |
|           |                    |          |      |                  |         | SMALLMOUTH BASS | -        | -              | €                   | Ø                    |
|           |                    |          |      |                  |         |                 | -        | •              | 124                 | 95-108               |
|           |                    |          | 1    |                  |         | YELLOW PERCH    | +11      | ED.            | 68                  | 110-129              |
|           |                    |          | 4    | NO VEGETATION    | 0       | ROCKBASS        | ÷11      | 7              | 118                 | 120-160              |
|           |                    |          |      |                  |         | SMALLMOUTH BASS | -        | ĸ              | 58                  | 90-110               |
|           |                    |          |      |                  |         | SMALLMOUTH BASS | 11+      | -              | 168                 | 221                  |

| APPENDIX<br>HOOPNET CATCH DATA | ATCH | DATA                                 |                                 |      | 1<br>1<br>0<br>0<br>0<br>1 | VEGETATION        | TION    |  |         | FISH         | Į,   |
|--------------------------------|------|--------------------------------------|---------------------------------|------|----------------------------|-------------------|---------|--|---------|--------------|--|
| DATE                           | æ    | RIVER                                | LOCATION                        | STA. | į                          | DOMINANT<br>TAXA  | DENSITY |  | LIFE    | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)  |
| 6 83                           | ST.  | ST. CLAIR                            | RUSSELL                         | -    | P01.                       | 1 POT. PRAELONGIS | MEO.    | SPOTTAIL SHINER<br>ROCKBASS<br>ROCKBASS<br>VELLOW PERCH<br>VELLOW PERCH    | + + +   | € - 4 0 €    | 20<br>20<br>20<br>30<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40 |
|                                |      |                                      |                                 | 2    | ><br>0                     | NO VEGETATION     | o       | ROCKBASS<br>SMALLMOUTH BASS<br>YELLOW PERCH                                | † † †   | ស <b>ឲ</b> ÷ | 686<br>75<br>14  |
|                                |      |                                      |                                 | m    | P01.                       | 3 POT PRAELONGIS  | MED.    | WHITE SUCKER SPOTTAIL SHINER HORNYHEAD CHUB ROCKBASS ROCKBASS YELLOW PERCH | + + + + |              | 00 - 1 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4   |
| 1<br>1<br>1<br>1<br>1<br>1     |      | 1<br>3<br>9<br>9<br>8<br>8<br>1<br>1 | ,<br>;<br>;<br>;<br>;<br>;<br>; | 4    | ><br>2                     | 4 NO VEGETATION   | 0       | ROCKBASS<br>ROCKBASS   | +11     | - <b>s</b> o | 22<br>630  |

LENGTH RANGE (MM) 103-129 86 112-154 109 110-265 127-261 95-106

136 108-129 116-118 90 130-257 97-108 111-200

101 125-190

Q-9

| APPENDIX<br>HOOPNET | APPENDIX<br>Hoopnet Catch Data |          |          | VEGETATION                   | 10N     |   |   | I            | FISH                                   |  |
|---------------------|--------------------------------|----------|----------|------------------------------|---------|---|---|--------------|--|--|
| DATE                | RIVER                          | LOCATION | STA.     | DOMINANT                     | DENSITY | SPECIES   | LIFE                                    | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)                    | LENGTH<br>RANGE (MM)                       |
| 68/8/83             | DETROIT                        | 8 ELLE   | -        | NO VEGETATION                | 0       | SPOTTAIL SHINER<br>ROCKBASS<br>LOGPERCH<br>YELLOW PERCH             | + | - 0 - 10     | 20<br>10<br>10<br>237                  | 100<br>77- 91<br>105<br>112-244            |
|                     |                                |          | 8        | POT. RICHARDSONI             | MED.    | SPOTTAIL SHINER<br>ROCKBASS<br>YELLOW PERCH<br>YELLOW PERCH         |   | -64-0        | 12<br>53<br>44<br>15<br>187            | 104<br>78-108<br>113-115<br>109<br>112-132 |
|                     |                                |          | <b>6</b> | NAUAS FLEXILIS               | MED.    | SPOTTAIL SHINER ROCKBASS ROCKBASS YELLOW PERCH                      | + + +                                   |              | 0<br>8 4 2 4 8 8 8 8                   | 90<br>80<br>122-140<br>100<br>111          |
|                     |                                |          | 4        | NO VEGETATION                | 0       | ROCKBASS<br>ROCKBASS<br>PUMPKINSEED<br>VELLOW PERCH<br>VELLOW PERCH | ++ +                                    |              | 270<br>134<br>14<br>20                 | 235<br>184<br>106<br>106                   |
|                     |                                | HENNEDIN | -   8    | NO VEGETATION<br>POT. NARROW | O MED.  | YELLOW PERCH YELLOW PERCH   | +11                                     |              | 22                                     | 130  |
|                     |                                |          | Б        | VALLISNERIA AMER             | HIGH    | STONEROLLER<br>ROCKBASS<br>ROCKBASS<br>PUMPKINSEED<br>VELLOW PERCH  | + + + +                                 | <br>         | 13<br>36<br>66<br>66<br>14<br>18<br>12 | 126<br>95<br>128<br>143<br>100-108         |
|                     |                                |          | 4        | NO VEGETATION                | 0       | NO FISH CAUGHT  | !<br>!<br>!                             | <br>         | <br>                                   | •<br>•<br>•<br>•<br>•                      |

| APPENDIX<br>HOOPNET ( | APPENDIX<br>Hoopnet Catch Data |          |      | VEGETATION       | TION     |   |                              | FI              | FISH                                   |  |
|-----------------------|--------------------------------|----------|------|------------------|----------|---|------------------------------|-----------------|--|--|
| DATE                  | RIVER                          | LOCATION | STA. | DOMINANT         | DENSITY  | SPECIES   | LIFE<br>STAGE                | T0TAL<br>NO.    | 101AL<br>WT.<br>(G)                    | LENGTH<br>RANGE (MM)                                 |
| 8/8/6                 | DETROIT                        | STONY    | -    | VALLISNERIA AMER | H<br>H   | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                                      | ++                           |                 | 158                                    | 80<br>196<br>125-168                                 |
|                       |                                |          | 8    | NO VEGETATION    | 0        | YELCOW BULLHEAD<br>CHANNEL CATFISH<br>STONECAT<br>HORNYHEAD CHUB          | <br>  + + +<br>  +   +  <br> | ,<br> <br>  -00 | 1650<br>268<br>12<br>22                | 335-410<br>152-225<br>105<br>56                      |
|                       |                                |          | e    | MYRIO. SPICATUM  | <b>5</b> | CHANNEL CATFISH CARP BLACK REDHORSE GOLDEN REDHORSE ROCKBASS YELLOW PERCH | *****                        | <br>            | 910<br>780<br>708<br>708<br>204        | 435<br>378<br>360<br>405<br>117-210                  |
| •                     |                                |          | 4    | NO VEGETATION    | 0        | CHANNEL CATFISH CARP GOLDEN REDHORSE ROCKBASS ROCKBASS                    | ****                         | เมละสะส         | 5144<br>2244<br>874<br>16<br>72<br>102 | 341-545<br>415-450<br>436<br>73-80<br>155<br>167-175 |

| HOOPNET  | HOOPNET CATCH DATA |          |      | VEGETATION                              | NOI       | 1               |            | Ī            | FISH                |                      |
|----------|--------------------|----------|------|---|-----------|-----------------|------------|--------------|---------------------|----------------------|
| DATE     | RIVER              | LOCATION | STA. | DOMINANT<br>TAXA                        | DENSITY   | SPECIES         | LIFE       | TOTAL<br>NO. | TOTAL<br>WT.<br>(G) | LENGTH<br>RANGE (MM) |
| 10/ 4/83 | ST. CLAIR          | STAG     | -    | SON                                     | MED.      | WHITE SUCKER    | 0          | - 4          | 0.00                |                      |
|          |                    |          |      |   |           | HORNYMEAD CHEE  | <u>:</u> : | n e          | 0 R<br>0 Q<br>0 Q   | 20-138<br>08-138     |
|          |                    |          |      |   |           | ROCKBASS        |            | , e          | 2 5                 | 64-80                |
|          |                    |          |      |   |           | ROCKBASS        | ÷          | -            | \$                  | 165                  |
|          |                    |          |      |   |           |                 | <b></b>    | 22           | 197                 | 92-109               |
|          |                    |          | 1    | 1 | 1         | YELLOW PERCH    | +11        | 20           | 1989                | 110-206              |
|          |                    |          | 7    | NO VEGETATION                           | 0         | WHITE SUCKER    | <b>1</b>   | -            | ō                   | 112                  |
|          |                    |          |      |   |           | HORNYHEAD CHUB  | ÷          | 7            | 131                 | 105-128              |
|          |                    |          |      |   |           | ROCKBASS        | -          | 6            | 77                  | 69- 92               |
|          |                    |          |      |   |           | ROCKBASS        | +11        | g            | <b>586</b>          | 118-146              |
|          |                    |          |      |   |           | VELLOW PERCH    | ÷i.        | <b>-</b>     | 1581                | 112-208              |
|          |                    |          |      | 1 | 1         | WALLEYE         | -          | -            | 120                 | 254                  |
|          |                    |          | 6    | NO VEGETATION                           | 0         | WHITE SUCKER    | <u>+</u>   | 7            | 32                  | 112-134              |
|          |                    |          |      |   |           | HORNYHEAD CHUB  | ÷          | 8            | 34                  | 116-118              |
|          |                    |          |      |   |           |                 | +11        | <b>O</b>     | 676                 | 112-220              |
|          |                    |          |      |   |           |                 | <b></b>    | ~            | =                   | 75- 96               |
| •        |                    |          | 1    |   |           | YELLOW PERCH    | +11        | Ξ,           | 292                 | 112-165              |
|          |                    |          | 4    | POT. PRAELONGIS                         | <b>10</b> | HORNYHEAD CHUB  | <b>+1</b>  | -            | 18                  | 122                  |
|          |                    |          |      |   |           | ROCKBASS        | <b>.</b>   | -            | ₽                   | 83                   |
|          |                    |          |      |   |           | ROCKBASS        | +11        | 7            | <b>&amp;</b>        | 131-136              |
|          |                    |          |      |   |           |                 | -          | Ю.           | 77                  | 60-109               |
|          |                    |          | 1    |   |           | YELLOW PERCH    | +11        | 58           | 863                 | 112-226              |
|          |                    | FAWN     | -    | POT. PRAELONGIS                         | MED.      | ROCKBASS        |            | -            | 16                  | 96                   |
|          |                    |          |      |   |           | ROCKBASS        | +11        | 9            | 900                 | 116-185              |
|          |                    |          | 1    |   |           | SMALLMOUTH BASS | 0          | -            | es .                | 7.7                  |
| •        |                    |          |      | -                                       | 0         | ROCKBASS        | 11+        | -            | 2                   | 150                  |
|          |                    |          | ၉    | POT. PRAELONGIS                         | MED.      |                 | +11        | -            | 18                  | 111                  |
|          |                    |          |      |   |           |                 | <b>±</b>   | ~            | 2                   | 134-139              |
|          |                    |          |      |   |           | ROCKBASS        | +11        | 6            | 745                 | 178-238              |
|          |                    |          |      |   |           | VELLOW PERCH    | -          | <b>a</b> o   | 87                  | 95-109               |
|          |                    |          |      |   |           | ٩               | +11        | 33           | 1562                | 110-307              |
|          |                    |          | 4    | NO VEGETATION                           | 0         | HORNYHEAD CHUB  | + 11       | -            | 14                  | 113                  |
|          |                    |          |      |   |           | ROCKBASS        | -          | 7            | 23                  | 85- 87               |
|          |                    |          |      |   |           |                 | -          | ~            | <del>6</del>        | 97-105               |
|          |                    |          |      |   |           | VELLOW PERCH    | <u>+</u>   | ٧            | -                   | 122-1R1              |

| APPENDIX<br>HOOPNET CATCH DATA |          |          | VEGETATION      | T 10N       |   |                           | FI           | FISH  |  |
|--------------------------------|----------|----------|-----------------|-------------|---|---------------------------|--------------|---|--|
| DATE RIVER                     | LOCATION | STA.     | DOMINANT        | DENSITY     | SPECIES   | LIFE                      | TOTAL<br>NO. | T07AL<br>WT.                                      | LENGTH<br>RANGE (MM)                           |
| 10/ 4/83 CLAIR                 | RUSSELL  | -        | POT. PRAELONGIS | H<br>E<br>E | HORNYHEAD CHUB<br>ROCKBASS<br>BLACK CRAPPIE<br>YELLOW PERCH             | <br>  + H<br>  + H<br>  H |              | 2127  | 103 117<br>80-105<br>236<br>98-108<br>110-120  |
|                                |          | a        | NO VEGETATION   | 0           | HORNYHEAD CHUB<br>ROCKBASS<br>ROCKBASS<br>BLACK CRAPPIE<br>YELLOW PERCH | + . † † . †               |              | 152<br>34<br>580<br>506<br>506<br>22<br>22<br>265 | 67 - 93<br>127 - 180<br>213 - 228<br>108 - 109 |
|                                |          | es<br>es | POT. NARROW     | E D         | SPOTTAIL SHINER<br>HORNYHEAD CHUB<br>YELLOW PERCH                       |                           | w-rom        | 32<br>19<br>162<br>162                            | 95-107<br>120<br>87-106<br>110-213             |
| ·                              |          | 4        | NO VEGETATION   | 0           | CARP<br>ROCKBASS<br>ROCKBASS<br>SWALLMOUTH BASS<br>YELLOW PERCH         | *****                     |              | 2700<br>24<br>24<br>30                            | 570<br>107<br>112-125<br>88<br>102<br>116-120  |

| APPENDIX<br>HOOPNET | APPENDIX<br>HOOPNET CATCH DATA |  |               | VEGETATION       | T I ON  |  |         | i.           | FISH   |   |
|---------------------|--------------------------------|--|---------------|------------------|---------|--|---------|--------------|--|---|
| DATE                | RIVER                          | LOCATION   | STA.          | DOMINANT         | DENSITY | SPECIES  | LIFE    | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)  | LENGTH<br>RANGE (MM)                          |
| 10/ 6/83            | DETROIT                        | BELLE  | -             | POT. RICHARDSONI | MED.    | KBAS<br>LLMO<br>LOW<br>LOW   | + + + + | 24-42        | 32<br>23<br>10<br>68<br>410  | 101-107<br>90- 93<br>96<br>102-107<br>113-156 |
|                     |                                |  | a             | NO VEGETATION    | 0       | ROCKBASS BLUEGILL SMALLMOUTH BASS YELLOW PERCH                         | ***     | 84-60        | 310<br>40<br>12<br>26<br>385   | 184-216<br>131<br>131<br>98-106<br>110-170    |
|                     |                                |  | m             | NITELLA HYALINA  | HIGH    | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                                   | ++111   | 0 - 0        | 214  | 54- 80<br>216<br>113-115                      |
|                     |                                |  | 4             | NO VEGETATION    | 0       | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH<br>YELLOW PERCH                   | 1111    | นนผติ        | 31<br>430<br>232   | 81-107<br>206-211<br>97-107<br>110-141        |
|                     |                                | NI GENERAL SERVICE SER | :<br> -<br> - | VALLISNERIA AMER | ED.     |  | +11011  | 7 + + + + 7  | 8 4 4 m 2 4  | 25<br>130<br>140<br>140<br>171-01             |
|                     |                                |  |               | NO VEGETATION    | 0       |  | + +     | ~~~~ m       | 47<br>27<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20   | 83<br>211<br>102<br>108<br>120-124            |
|                     |                                |  | 6             | VALLISNERIA AMER | MED.    | BROWN BULLHEAD<br>STONECAT<br>WHITE SUCKER<br>ROCKBASS<br>YELLOW PERCH | ****    |              | 200<br>491<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00 | 282<br>245<br>207<br>102<br>185               |
|                     |                                |  | 4             | NO VEGETATION    | 0       | YELLOW PERCH   | +11     | -            | 51   | 117   |

|                 | DATA     |
|-----------------|----------|
|                 | CATCH    |
| <b>APPENDIX</b> | HOOPNE 7 |
|                 |          |

| HOOPNET  | HOOPNET CATCH DATA |          |        | VEGETATION      | VT TON  |  | !      | F            | FISH  |  |
|----------|--------------------|----------|--------|-----------------|---------|--|--------|--------------|---|--|
| DATE     | RIVER              | LOCATION | STA.   | DOMINANT        | DENSITY | SPECIES  | LIFE   | TOTAL<br>NO. | 101AL<br>WT.<br>(G)   | LENGTH<br>RANGE (MM)                   |
| 10/ 6/83 | DETROIT            | STONY    | -<br>- | MYRIO. EXALBESC | HIGH    | NORTHERN PIKE WHITE PERCH GOLDFISH CARP ROCKBASS YELLOW PERCH      | ±0±±== |              | 2000<br>6<br>4100<br>64<br>135  | 7 10<br>78<br>161<br>380-545<br>58- 80 |
|          | ·                  |          | ~      | 2 NO VEGETATION | 0       | BROWN BULLHEAD<br>ROCKBASS<br>ROCKBASS<br>BLACK CRAPIE             | + +++  | -00          | 214<br>28<br>160<br>350<br>26   | 253<br>24-95<br>119-168<br>133         |
|          |                    |          | ю.     | MYRIO. EXALBESC | MED.    | CHANNEL CATFISH<br>STONECAT<br>WHITE PERCH<br>ROCKBASS<br>ROCKBASS | ** *   | 00           | 00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00.00<br>00 | 450-715<br>1855<br>129<br>129<br>148   |
| •        |                    |          | 4      | NO VEGETATION   | 0       | YELLOW BULLHEAD<br>CHANNEL CATFISH<br>STONECAT<br>ROCKBASS         | ****   | -44-         | 1884<br>628<br>222  | 232<br>420-454<br>214-235<br>221       |

I

| PPENDIX<br>DOPNET C | APPENDIX<br>Hoopnet Catch Data |          |      | VEGETATION    | ATION       |                            |                  | I                          | FISH                  |                                       |
|---------------------|--------------------------------|----------|------|---------------|-------------|----------------------------|------------------|----------------------------|-----------------------|---------------------------------------|
| DATE                | RIVER                          | LOCATION | STA. | DOMINANT      | DENSITY     | SPECIES                    | LIFE             | TOTAL<br>NO.               | 101AL<br>WT.<br>(G)   | LENGTH<br>RANGE (MM                   |
| 5/21/84             | ST. CLAIR                      | STAG     | -    | NO VEGETATION | 0           | NO FISH CAUGHT             | ,<br>!<br>!<br>! | !<br>!<br>!                | i<br>!<br>!           | :<br>:<br>:<br>:<br>:                 |
|                     |                                |          | 7    | PGT. NARROW   | <b>3</b> 07 | ALEWIFE<br>GOLDEN REDHORSE | <u>+</u>         |                            | 1200                  | 197                                   |
|                     |                                |          | 6    | NO VEGETATION | 0           | ROCKBASS                   | +11              | 7                          | 714                   | 231-264                               |
|                     |                                |          | 4    | . ₹           | NO.         | NO FISH CAUGHT             | )<br>            |                            | i<br>i<br>i<br>i<br>i | ;<br>;<br>;<br>;<br>;                 |
|                     |                                | FAWN     | -    | NO VEGETATION | 0           | NO FISH CAUGHT             | !<br>!<br>!<br>! | ,<br>1<br>1<br>1<br>1<br>1 | 6<br>1<br>1<br>6<br>6 | •<br>•<br>•<br>•<br>•<br>•<br>•       |
|                     |                                |          | 7    | NO VEGETATION | 0           | NO FISH CAUGHT             | ,<br>,<br>,<br>, | !<br>!<br>!<br>!           |                       | *  *  *  *  *  *  *  *  *  *  *  *  * |
|                     |                                |          | 6    | NO VEGETATION | 0           | . •                        | )<br>            |                            | i<br> <br>            | <br>                                  |
|                     |                                |          | 4    | NO VEGETATION | 0           | NO FISH CAUGHT             |                  | ;<br>;<br>;<br>;<br>;<br>! | i<br>1<br>1<br>1<br>1 |                                       |
|                     |                                | RUSSELL  | <br> | POT. NARROW   | <b>307</b>  | ROCKBASS<br>VELLOW PERCH   | <b>+11</b>       |                            | 134                   | 194                                   |
|                     |                                |          | 2    | NO VEGETATION | 0           | YELLOW PERCH               | +11              | -                          | စ္က                   | 145                                   |
|                     |                                |          | 6    | POT. NARROW   | רסא         | NO FISH CAUGHT             |                  | !<br>!<br>!<br>!           |                       |                                       |
|                     |                                |          | 4    | NO VEGETATION | 0           | NO FISH CAUGHT             |                  | ,<br> <br>                 |                       |                                       |

| APPENDIX<br>HOOPNET C | APPENDIX<br>Hoopnet Catch Data |          |      | VEGETATION       | ATION   |  |              | F                     | FISH                |                                     |
|-----------------------|--------------------------------|----------|------|------------------|---------|--|--------------|-----------------------|---------------------|-------------------------------------|
| DATE                  | RIVER                          | LOCATION | STA. | DOMINANT<br>TAXA | DENSITY | SPECIES  | LIFE         | TOTAL<br>NO.          | TOTAL<br>WT.<br>(G) | LENGTH<br>RANGE(MM)                 |
| 5/23/84               | DETROIT                        | BELLE    | -    | CHARA SPP.       | TOM     | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                 | + 111        | 10 + cl               | 0 8 4<br>0 8 4      | 76-104<br>130<br>125-154            |
|                       |                                |          | 8    | NO VEGETATION    | o       | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH<br>YELLOW PERCH | + +<br>      |                       | 653                 | 83-103<br>117-220<br>109<br>122-144 |
|                       |                                |          | က    | NO VEGETATION    | o       | ROCKBASS<br>VELLOW PERCH                             | +111         |                       | 32                  | 48-106                              |
|                       |                                |          | 4    | NO VEGETATION    | 0       | ROCKBASS<br>ROCKBASS                                 | +II<br>I     | -4                    | 13                  | 90                                  |
|                       |                                | HENNEPIN | -    | NO VEGETATION    | 0       | NO FISH CAUGHT                                       |              | 1<br>1<br>1<br>1<br>1 |                     | <br>                                |
|                       |                                |          | 7    | NO VEGETATION    | 0       | ROCKBASS<br>YELLOW PERCH                             | +11          | n w                   | 335                 | 142-202                             |
|                       |                                |          | 9    | NO VEGETATION    | 0       | YELLOW PERCH   | +11          | 4                     | 7.8                 | 115-130                             |
|                       |                                |          | 4    | NO VEGETATION    | 0       | SPOTTALL SHINER                                      | +11          | -                     | 12                  | 115                                 |
|                       |                                |          |      |                  |         | ROCKBASS<br>Yellow Perch                             | <u>:</u> :   | <b>~</b> №            | 30<br>555           | 116<br>128-187                      |
|                       |                                |          |      |                  |         | WALLEYE  | +11          | -                     | 460                 | 383                                 |
|                       |                                | STONY    | -    | NO VEGETATION    | 0       | NO FISH CAUGHT                                       |              |                       |                     |                                     |
|                       |                                |          | 7    | NO VEGETATION    | 0       | STONECAT   | +11          | 8                     | 298                 | 233-253                             |
|                       |                                |          |      |                  |         | WHITE SUCKER   | + :<br>••• : | ය<br>ග                | 46030               | 368-540                             |
|                       |                                |          |      |                  |         | SPOTTAIL SHINER                                      | +1:          | N •                   | S 5                 | 96-119                              |
|                       |                                |          |      |                  |         | WALLEYE  | ##           |                       | 202                 | <b>3</b> + 1                        |
|                       |                                |          | 6    | NO VEGETATION    | 0       | ROCKBASS   | Ė            | 5.                    | 2233                | 179-230                             |
|                       |                                |          |      |                  |         |  |              | , !                   |                     |                                     |
|                       |                                |          | 4    | NO VEGETATION    | 0       | NO FISH CAUGHI                                       |              |                       |                     |                                     |

| APPENDIX<br>HOOPNET CATCH DATA | ATCH DAT  | ⋖           |          |      | VEGETATION       | r 1 0N      |  |          | FI           | FISH                    |                                 |
|--------------------------------|-----------|-------------|----------|------|------------------|-------------|--|----------|--------------|-------------------------|---------------------------------|
| DATE                           | RIVER     |             | LOCATION | STA. | DOMINANT         | DENSITY     | SPECIES  | LIFE     | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)     | LENGTH<br>RANGE (MM)            |
| 6/12/84                        | ST. CLAIR | <br>        | STAG     | -    | POT. RICHARDSONI | <b>F</b> 04 | RAINBOW SMELT<br>ROCKBASS                                | +11      |              | 190                     | 94                              |
|                                |           |             |          | 7    | NO VEGETATION    | 0           | RAINBOW SMELT<br>ROCKBASS                                | + 11     |              | 10<br>400               | 120                             |
|                                |           |             |          | 6    | CHARA SPP.       | NO.         | NO FISH CAUGHT   |          |              |                         | <br>                            |
|                                |           | ,           |          | 4    | NO VEGETATION    | 0           | RAINBOW SMELT<br>SPOTTAIL SHINER                         | +        |              | 5.4                     | 127                             |
|                                |           |             | FAWN     | -    | NO VEGETATION    | 0           | RAINBOW SMELT  | 1        | -            | 60                      | 118                             |
|                                |           |             |          | 7    | NO VEGETATION    | 0           | RAINBOW SMELT<br>VELLOW PERCH                            | <u> </u> | - 6          | 0.4                     | 118<br>118-133                  |
|                                |           |             |          | m    | NO VEGETATION    | 0           | . 38 ^ :   | ++       |              | 2<br>7<br>7<br>8        | 116<br>118<br>127               |
|                                |           | ,           |          | 4    | NO VEGETATION    | o           | NO FISH CAUGHT   |          |              |                         | <br>                            |
|                                |           | <b>. 45</b> | RUSSELL  | -    | POT. NARROW      | AO 7        | RAINBOW SMELT<br>TROUT PERCH<br>ROCKBASS<br>YELLOW PERCH | +++      |              | 8 - 4 E                 | 113<br>104<br>138<br>111-116    |
|                                |           |             |          | 7    | NO VEGETATION    | 0           | RAINBOW SMELT<br>YELLOW PERCH                            | *II      | ၉ဖ           | 29<br>493               | 124-127                         |
|                                |           |             |          | е    | POT. NARROW      | AO T        | RAINBOW SMELT<br>ROCKBASS<br>YELLOW PERCH<br>WALLEYE     | +++      | 2 + + 2      | 822<br>236<br>92<br>762 | 96-136<br>227<br>210<br>316-381 |
|                                |           |             |          | 4    | NO VEGETATION    | 0           | RAINBOW SMELT<br>YELLOW PERCH                            |          | 39           | 348                     | 100-135<br>105                  |

| Coloration   Col   | APPENDIX<br>HOOPNET | APPENDIX<br>Hoopnet Catch Data |          |        | VEGETATION       | ATION   |  |                       | 14               | FISH                    |                                     |
|--|---------------------|--------------------------------|----------|--------|------------------|---------|--|-----------------------|------------------|-------------------------|-------------------------------------|
| MONTABLE   MONTABLE SHINER   114   1   18   114   18   114   18   114   18   114   18   18   | DATE                | RIVER                          | LDCATION | STA.   | DOMINANT<br>TAXA | DENSITY | SPECIES  | LIFE                  | TOTAL<br>NO.     | TOTAL<br>WT.<br>(G)     | LENGTH<br>RANGE (MM)                |
| 2 NO VEGETATION O ROCKBASS II+ 5 730 165-2 ROCKBASS II+ 5 506 137-2 ROCKBASS II+ 5 506 137-2 ROCKBASS II+ 1 1 2 32 84-128-128-128-128-128-128-128-128-128-128  | 5/18/84             | DETROIT                        | BELLE    | -      | POT. CRISPUS     | AO I    | . w  | 1111                  | - w 4 w          | 101<br>394<br>364       | 115<br>84-102<br>116-208<br>129-143 |
| A NO VEGETATION O ROCKBASS II+ 5 556 137-2  A NO VEGETATION O ROCKBASS II+ 1 50 188-1  A NO VEGETATION O NO FISH CAUGHT  A NO VEGETATION O SPOTTALL SHINER II+ 1 1 100 113-2  STONY I POT. CRISPUS MED. WHITE BASS II+ 2 244 186-2  A NO VEGETATION O SPOTTALL SHINER II+ 3 304 194-2  A NO VEGETATION O SPOTTALL SHINER II+ 3 304 194-2  A NO VEGETATION O SPOTTALL SHINER II+ 1 342 306-1  A NO VEGETATION O SPOTTALL SHINER II+ 1 4 106-2  A NO VEGETATION O SPOTTALL SHINER II+ 1 342 306-1  A NO VEGETATION O SPOTTALL SHINER II+ 1 40 140-1  B NOT. CRISPUS MED. WHITE BASS II+ 1 40 140-1  A NO VEGETATION O STONECAT II+ 1 40 140-1  B NOT. CRISPUS UN STONECAT II+ 1 40 140-1  B NOT. CRISPUS UN STONECAT II+ 16 5-124 130-1  B NOT. CRISPUS UN STONECAT II+ 16 2124 201-2  A NO VEGETATION O STONECAT II+ 16 3-2124 201-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 201-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 201-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 201-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 201-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-2124 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-214 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-214 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-214 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-214 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-214 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-214 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-214 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-24 300-2  B NOT. CRISPUS UN STONECAT II+ 16 3-24 300-2  B NO |                     |                                |          | 6      | NO VEGETATION    | 0       | ROCKBASS   | +11                   | 160              | 730                     | 165-227                             |
| ## MO VEGETATION O ROCKBASS II+ 1 150 1984-  HENNEPIN 1 POT. NARROW MED. NO FISH CAUGHT  2 NO VEGETATION O NO FISH CAUGHT  3 POT. NARROW MED. SPOTTAIL SHINER II+ 1 12 19 113-  4 NO VEGETATION O SPOTTAIL SHINER II+ 2 19 96-  5 STONY 1 POT. CRISPUS MED. WHITE BASS II+ 2 148 158-  7 NO VEGETATION O SPOTTAIL SHINER II+ 2 19 96-  8 STONY 1 POT. CRISPUS MED. WHITE BASS II+ 1 30-4 194-  14 NO VEGETATION O STONECAT II+ 18 2124 201-  8 POT. CRISPUS LOW STONECAT II+ 18 2124 201-  8 POT. CRISPUS LOW STONECAT II+ 18 2124 201-  8 POT. CRISPUS LOW STONECAT II+ 3 263 128-  1 NO VEGETATION O ROCKBASS II+ 3 263 128-  1 NO VEGETATION O ROCKBASS II+ 3 263 128-  1 NO VEGETATION O ROCKBASS II+ 3 263 128-   |                     |                                |          | 6      | CHARA SPP.       | #D7     | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                 | ++                    | 40-              | 77<br>556<br>20         | 85- 89<br>137-217                   |
| HENNEPIN 1 POT. NARROW MED. NO FISH CAUGHT  2 NO VEGETATION 0 NO FISH CAUGHT  3 POT NARROW MED. SPOTTAIL SHINER II+ 1 12  ROCKBASS II+ 4 312  YELLOW PERCH II+ 1 12  YELLOW PERCH II+ 2 19  YELLOW PERCH II+ 3 236  4 NO VEGETATION 0 SPOTTAIL SHINER II+ 2 19  ROCKBASS II+ 3 304  WHITE BASS II+ 1 342  HORNYHEAD CHUB II+ 15 674  ROCKBASS II+ 15 674  A NO VEGETATION 0 ROCKBASS II+ 1 342  HORNYHEAD CHUB II+ 18 2124  A NO VEGETATION 0 ROCKBASS II+ 3 263   |                     |                                |          | 4      | NO VEGETATION    | 0       | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                 | ++                    | a-a              | 150<br>150<br>49        | 84 - 95<br>193<br>128 - 130         |
| 2 NO VEGETATION O NO FISH CAUGHT  3 POT NARROW MED. SPOTTAIL SHINER II+ 1 12  4 NO VEGETATION O SPOTTAIL SHINER II+ 2 128  STONY 1 POT. CRISPUS MED. WHITE BASS II+ 2 244  2 NO VEGETATION O STONECAT II+ 3 304  WHITE BASS II+ 1 3 42  HORNYHEAD CHUB I+ 1 40  ROCKBASS II+ 5 674  3 POT. CRISPUS LOW STONECAT II+ 18 5 674  4 NO VEGETATION O ROCKBASS II+ 13 2124  4 NO VEGETATION O ROCKBASS II+ 3 263  4 NO VEGETATION O ROCKBASS II+ 1 30  |                     |                                | HENNEPIN | -      |                  | MED.    | NO FISH CAUGHT                                       | ,<br>,<br>,<br>,<br>, | f<br>            | 1<br>1<br>1<br>1<br>1   | <br>                                |
| 3 POT. NARROW MED. SPOTTAIL SHINER II+ 1 12 ROCKBASS II+ 3 236 4 NO VEGETATION O SPOTTAIL SHINER II+ 2 128 STONY 1 POT. CRISPUS MED. WHITE BASS II+ 2 244 2 NO VEGETATION O STONECAT II+ 3 304 HORNYHEAD CHUB I+ 1 40 ROCKBASS II+ 5 674 3 POT. CRISPUS LOW STONECAT II+ 18 2124 4 NO VEGETATION O ROCKBASS II+ 3 263 4 NO VEGETATION O ROCKBASS II+ 3 263   |                     |                                |          | 8      | NO VEGETATION    | 0       | NO FISH CAUGHT                                       | ;<br>;<br>;<br>;      | ;<br>;<br>;<br>; | è<br>:<br>:<br>:<br>:   | ;<br>;<br>;<br>;<br>;<br>;          |
| STONY   1 POT. CRISPUS   MED. WHITE BASS   I   2   128   |                     |                                |          | ,<br>e | POT. NARROW      | MEO.    |  | <u> </u>              | -40              | 312                     | 112<br>133-173<br>113-233           |
| STONY 1 POT. CRISPUS MED. WHITE BASS I 2 128 ROCKBASS II+ 2 244 2 NO VEGETATION 0 STONECAT II+ 3 304 HORNYHEAD CHUB I+ 1 40 ROCKBASS II+ 16 5 674 3 POT. CRISPUS LOW STONECAT II+ 18 2124 ROCKBASS II+ 2 211 ROCKBASS II+ 3 263 YELLOW PERCH II+ 1 130   |                     |                                |          | 4      | NO VEGETATION    | 0       | SPOTTAIL SHINER                                      | +11                   | 2                | 6                       | 96-104                              |
| 2 NO VEGETATION O STONECAT II+ 3 304 WHITE BASS II+ 1 342 HORNYHEAD CHUB I+ 1 40 ROCKBASS II+ 5 674 3 POT. CRISPUS LOW STONECAT II+ 18 2124 ROCKBASS II+ 2 211 4 NO VEGETATION O ROCKBASS II+ 3 263 VELLOW PERCH II+ 1 130   |                     |                                | STONY    | -      | POT. CRISPUS     | MED.    | WHITE BASS<br>ROCKBASS                               | 114                   | 77               | 128                     | 158-172<br>156-205                  |
| 3 POT. CRISPUS LOW STONECAT II+ 18 2124 ROCKBASS II+ 2 211 A NO VEGETATION O ROCKBASS II+ 3 263 VELLOW PERCH II+ 1 130   |                     |                                |          | 7      | NO VEGETATION    | 0       | STONECAT<br>WHITE BASS<br>HORNYHEAD CHUB<br>ROCKBASS | + + +<br>HH+H         | ωro              | 304<br>342<br>40<br>674 | 194-220<br>308<br>148<br>130-212    |
| 4 NO VEGETATION O ROCKBASS II+ 3 263 VELLOW PERCH II+ 1 130  |                     |                                |          | , e    |                  | MOT     | STONECAT<br>RDCKBASS                                 | +111<br>111+          | 2 2              | 2124 211                | 201-250                             |
|  |                     |                                |          | 4      | NO VEGETATION    | 0       | ROCKBASS<br>YELLOW PERCH                             | **                    | e -              | 263<br>130              | 128-192<br>217                      |

| DOPNE I | HOOPNET CATCH DATA |          |      |               | VEGETATION       | NO I    |   |   | FI                           | FISH              |   |
|---------|--------------------|----------|------|---------------|------------------|---------|---|---|------------------------------|-------------------|---|
| DATE    | RIVER              | LOCATION | STA. | DOMINANT      | !<br>!<br>!      | DENSITY | SPECIES                                       | LIFE                                    | TOTAL<br>NO.                 | 101AL<br>WT.      | LENGTH<br>RANGE (MM)                      |
| 7/23/84 | ST. CLAIR          | STAG     | -    |               | AMINEUS          | MED.    | NO FISH CAUGHT                                | 1                                       | [<br>                        | <br>              | †<br>†<br>†<br>†<br>†<br>†<br>†<br>†<br>† |
|         |                    |          | 2    | NO VEGETATION | EGETATION        | 0       | YELLOW PERCH                                  | +11                                     | -                            | 28                | 146                                       |
|         |                    |          | 6    | POT. RIC      | POT. RICHARDSONI | MED.    | ROCKBASS                                      | + 11                                    |                              | 28<br>1090        | 96  |
|         |                    |          | 4    | NO VEGETATION | TATION           | 0       | HORNYHEAD CHUB<br>ROCKBASS                    | † †                                     | - 00                         | 12                | 97  |
|         |                    | FAWN     | -    | NO VEGETATION | TATION           | 0       | NO FISH CAUGHT                                | <br>                                    | /<br>                        | #<br>!<br>!<br>!  | #<br>#<br>#<br>1<br>1<br>1<br>1<br>1      |
|         |                    |          |      | <u>.</u>      | AMINEUS          | MED     | HORNYHEAD CHUB<br>ROCKBASS<br>YELLOW PERCH    | + | 29                           | 828<br>990        | 13-237                                    |
|         |                    |          | 6    | Ι.            | GRAMINEUS        | MED.    | NO FISH CAUGHT                                | !<br>!<br>:<br>!<br>!                   | <i>} i i i i i i i i i i</i> | !<br>!<br>!<br>!  | }<br>                                     |
|         |                    |          | 4    | NO VEGETATION | EGETATION        | 0       | HORNYHEAD CHUB<br>ROCKBASS<br>SMALLMOUTH BASS | +++                                     | ,<br>,<br>,<br>,<br>,<br>,   | 46<br>901<br>742  | 121-137<br>149-223<br>375                 |
|         |                    | RUSSELL  | -    | POT. GR       | GRAMINEUS        | MED.    | ROCKBASS                                      | ŧ                                       | 2                            | 538               | 232-245                                   |
|         |                    |          |      |               |                  |         |   |   | }<br>                        |                   |   |
|         |                    |          | 7    | NO VEGETATION | TATION           | 0       | ROCKBASS<br>SMALLMOUTH BASS<br>YELLOW PERCH   | ::::                                    | o – 0                        | 616<br>222<br>165 | 124-215<br>265<br>139-180                 |
|         |                    |          | 8    | POT. GR       | GRAMINEUS        | MED.    | HORNYHEAD CHUB                                | <u> </u>                                | 4                            | 63                | 134                                       |
| •       |                    |          |      |               |                  |         | YELLOW PERCH                                  | +11                                     | 27                           | 1106              | 120-264                                   |
|         |                    |          | 4    | NO VEGETATION | TATION           | 0       | ROCKBASS<br>SMALLMOUTH BASS<br>YELLOW PERCH   | ***                                     | <b>σ</b>                     | 1090<br>980<br>30 | 140-239<br>408<br>135                     |

| APPENDIX<br>HOOPNET | APPENDIX<br>HOOPNET CATCH DATA |          |      | VEGETATION       | LION     |   |   | F                          | FISH                                |  |
|---------------------|--------------------------------|----------|------|------------------|----------|---|---|----------------------------|-------------------------------------|--|
| DATE                | RIVER                          | LOCATION | STA. | DOMINANT         | DENSITY  | SPECIES   | LIFE                                    | TOTAL<br>NO.               | TOTAL<br>WT.<br>(G)                 | LENGTH<br>RANGE (MM)                       |
|                     | DETROIT                        | BELLE    | -    | NO VEGETATION    | 0        | WHITE PERCH/WHITE<br>SPOTTAIL SHINER<br>ROCKBASS<br>ROCKBASS<br>YELLOW PERCH          | + + +                                   | 440                        | 16<br>12<br>32<br>270<br>376        | 106<br>104<br>83-100<br>112-219<br>112-161 |
|                     |                                |          | 6    | MYRIG. EXALBESC  | <b>*</b> | CARP<br>ROCKBASS<br>ROCKBASS<br>BLUEGILL<br>YELLOW PERCH                              | ;<br>  + +<br>  + H H<br>  H H H H      | -0                         | 2700<br>26<br>38<br>12<br>12        | 665<br>77 - 78<br>118<br>83                |
|                     |                                |          | 6    | POT. RICHARDSONI | MED.     | ROCKBASS  |   | 9                          | 72                                  | 67- 85                                     |
|                     |                                |          | 4    | >                | 0        | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH  | 11+                                     | 664                        | 31<br>196<br>80                     |  |
|                     |                                | HENNEPIN | -    | POT. NARROW      | LOW.     | SPOTTAIL SHINER   | 11+                                     | 7                          | 16                                  | 110-112                                    |
|                     |                                |          | 7    | · > :            | 0        | FISH  | ]<br>[<br>]<br>[<br>[                   | ;<br>6<br>1<br>1<br>1<br>2 | ;<br>!<br>!<br>!                    | ;<br>;<br>;<br>;<br>;<br>;<br>;<br>;<br>;  |
|                     |                                |          | ဗ    | MYRIO. EXALBESC  | FOM      | CARP<br>SPOTTAIL SHINER<br>ROCKBASS   | + |                            | 1300                                | 440<br>93<br>135                           |
|                     |                                |          | 4    | NO VEGETATION    | 0        | ROCKBASS<br>PUMPKINSEED<br>YELLOW PERCH<br>WALLEYE                                    | ++++                                    | -44-                       | 22<br>224<br>81<br>890              | 110<br>157-190<br>132-150<br>480           |
|                     |                                | STONY    | -    | MYRIO. EXALBESC  | W ED.    | STONECAT<br>SPOTTAIL SHINER<br>HORNYHEAD CHUB<br>ROCKBASS<br>ROCKBASS<br>YELLOW PERCH | ++ ++                                   |                            | 100<br>10<br>12<br>20<br>160<br>150 | 225<br>92<br>110<br>95<br>195<br>163-254   |
|                     |                                |          | 7    | NO VEGETATION    | 0        | ALEWIFE   | 0                                       | F                          | 91                                  | 47- 64                                     |
| •                   |                                |          | e .  | R10.             | AOT      | CARP<br>BLACK REDHORSE  | <b>*</b>                                |                            | 1100                                | 452<br>405                                 |
|                     |                                |          | 4    | NO VEGETATION    | 0        | CHANNEL CATFISH<br>ROCKBASS   | +11                                     | 4                          | 1582<br>362                         | 411-463                                    |

| DATE    |           |          |      | VEGETATION                              | TION           |                 |            | FISH         | T.                  |          |
|---------|-----------|----------|------|---|----------------|-----------------|------------|--------------|---------------------|----------|
|         | RIVER     | LOCATION | STA. | DOMINANT                                | DENSITY        | SPECIES         | LIFE       | TOTAL<br>NO. | TOTAL<br>WT.<br>(6) |          |
| 9/ 4/84 | ST. CLAIR | STAG     | -    | MYRIO. EXALBESC                         | H <sub>0</sub> | YELLOW PERCH    | +11        | -            | 38                  | 151      |
|         |           |          | 7    | NO VEGETATION                           | 0              | ALEWIFE         | 0          | 26           | 154                 | 74- 97   |
|         |           |          |      |   |                | ALEWIFE         | ₩ :        | -            | 9                   | <u> </u> |
|         |           |          |      |   |                | FRESHWATER DRUM | ÷::        |              | 650                 | 375      |
|         |           |          |      |   |                | VELLOW PERCH    | 11         | - 4          | 6.<br>04            | 120-150  |
|         |           |          |      | ELODEA CAMADENE                         | 7017           | DI ACK ORDUDORE | 4.6        |              | 070                 |          |
|         |           |          | 9    | CLUDEA CANADENS                         |                | HORNYHEAD CHUR  | <u>.</u> ± | v -          | 15                  | 4/3-501  |
|         |           |          |      |   |                | ROCKBASS        | ÷          | <b>-</b>     | 230                 | 219      |
|         |           |          |      |   |                | PUMPKINSEED     | <u> </u>   | - 6          | 77                  | 115      |
|         |           |          |      | 1 | 1 1 1 1 1 1    | TELLUW PERCH    | +11        | 2            | 912                 | 112-240  |
|         |           |          | 4    | NO VEGETATION                           | 0              | ROCKBASS        | 111        | -            | 82                  | 167      |
|         |           | FAWN     | -    | POT. RICHARDSONI                        | MED.           | ROCKBASS        | +11        |              | ဓ                   | 117      |
|         |           |          |      |   |                | BLACK CRAPPIE   | +11        | -            | 352                 | 281      |
|         |           |          | 7    | NO VEGETATION                           | 0              | ROCKBASS        | +11        | -            | 314                 | 244      |
|         |           |          |      |   |                | WALLEYE         | +11        | -            | 500                 | 311      |
|         |           |          | 6    | POT. PRAELONGIS                         | FEE            | ALEWIFE         | 0          | 2            | 5                   | 76- 86   |
|         |           |          |      |   |                | BLACK REDHORSE  | ÷          | -            | 682                 | 435      |
|         |           |          |      |   |                | HORNYHEAD CHUB  | ±          | - (          | 5<br>5<br>5         | 140      |
|         |           |          |      |   |                | VELLOW PERCH    | -          | n -          | 5<br>5<br>5<br>6    | 143-156  |
|         |           |          |      |   |                |                 | ***        | 46           | 1579                | 115-207  |
|         |           |          | 4    | NO VEGETATION                           | 0              | ALEVIFE         | 0          | -            | 4                   | 68       |
| •       |           |          |      |   |                | ROCKBASS        | +11        | •            | 413                 | 125-210  |
|         |           |          |      |   |                | VELLOW PERCH    | +11        | ~ <u>0</u>   | 12<br>827           | 115-164  |
|         |           |          |      |   |                |                 |            |              |                     |          |
|         |           | RUSSELL  | -    | POT. PRAELONGIS                         | H              | MORTHERN PIKE   | ± :        | - •          | 400                 | 775      |
|         |           |          |      |   |                |                 | <u>:</u> : |              | ° G                 | 174      |
|         |           |          |      |   |                | YELLOW PERCH    | +11        | -            | 8                   | 173      |
|         |           |          |      | NO VEGETATION                           | c              | POCKBASS        | +11        | 7            | 808                 | 147-224  |
|         |           |          | •    |   | ,              | YELLOW PERCH    | +11        | . 69         | 144                 | 154-172  |
|         |           |          | ၉    | POT. PRAELONGIS                         | HIGH           | YELLOW PERCH    | +11        | -            | 44                  | 154      |
|         |           |          | 1    |   |                | WALLEYE         | +111       | - !          | 480                 | 385      |
|         |           |          | 4    | NO VEGETATION                           | 0              | ROCKBASS        | +11        | -            | 262                 | 233      |
|         |           |          |      |   |                | PUMPKINSEED     | +11        | -            | 92                  | 144      |

| APPENDIX<br>HOOPNET CATCH DATA |          |      | VEGETATION        | LION        | ;<br>;<br>!   |                                       | FI           | FISH                             |   |
|--------------------------------|----------|------|-------------------|-------------|---|---------------------------------------|--------------|----------------------------------|---|
| DATE RIVER                     | LOCATION | STA. | DOMINANT          | DENSITY     | SPECIES   | LIFE                                  | TOTAL<br>NO. | TOTAL<br>WT.                     | LENGTH<br>RANGE (MM)                    |
| 9/10/84 DETROIT                | BELLE    | -    | POT. RICHARDSONI  | MED.        | ROCKBASS<br>ROCKBASS  | +11                                   | 7-           | 90                               | 83-105                                  |
|                                |          | 7    | NO VEGETATION     | 0           | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH                          | +++                                   |              | 172                              | 71<br>184<br>147-161                    |
|                                |          | 6    | VALLI SNERIA AMER | <b>*</b> 07 | ROCKBASS  | +11                                   | -            | 162                              | 219                                     |
|                                |          | 4    | × ×               | 0           | ROCKBASS<br>ROCKBASS  | 111                                   | ดต           | 50.0                             | 88-104<br>129-225                       |
|                                | HENNEPIN | -    | VALLISNERIA AMER  | <b>A</b> 07 | YELLOW PERCH<br>YELLOW PERCH                                  | 0 =                                   |              | <b></b>                          | 52                                      |
|                                |          | 7    | NO VEGETATION     | 0           | YELLOW PERCH  | <u>+11</u>                            | -            | 30                               | 150                                     |
|                                |          | က    | VALLISNERIA AMER  | MED.        | ROCKBASS  |                                       | -            | 12                               | 20                                      |
|                                |          | 4    | NO VEGETATION     | 0           | CHANNEL CATFISH<br>YELLOW PERCH                               | +11                                   | 7            | 610<br>319                       | 395<br>148-192                          |
|                                | STONY    | -    | MYRIO. SPICATUM   | MED.        | BROWN BULLHEAD<br>WHITE BASS<br>ROCKBASS                      | † o † i                               | 20.04        | 1462<br>20<br>26                 | 257-298<br>89-108<br>121                |
|                                |          | 7    | NO VEGETATION     | 0           | CHANNEL CATFISH<br>HORNYHEAD CHUB<br>ROCKBASS<br>YELLOW PERCH |                                       | <u>a-a-</u>  | 11310<br>24<br>350<br>56         | 339-635<br>126<br>196-210<br>165        |
|                                |          | ြ    | MYRIO. SPICATUM   | A C         | CHANNEL CATFISH STONECAT BLACK REDHORSE HORNYHEAD CHUB        | <br>  + +                             | 04           | 9140<br>128<br>1020<br>22<br>503 | 357-720<br>243<br>480<br>122<br>225-226 |
|                                |          | 4    | NO VEGETATION     | 0           | CHANNEL CATFISH<br>STONECAT<br>ROCKBASS                       | + + 1   1   1   1   1   1   1   1   1 | 9 - 6        | 4424<br>122<br>408               | 373-462<br>238<br>210-213               |

| APPENDIX<br>HOOPNET CATCH DATA | CATCH | DATA      |          |      | VEGETATION       | TION    |                               |                  | FI           | FISH                |                      |
|--------------------------------|-------|-----------|----------|------|------------------|---------|-------------------------------|------------------|--------------|---------------------|----------------------|
| DATE                           |       | RIVER     | LOCATION | STA. | DOMINANT         | DENSITY | SPECIES                       | LIFE             | TOTAL<br>NO. | TOTAL<br>WT.<br>(G) | LENGTH<br>RANGE (MM) |
| 10/ 2/84                       | ST.   | ST. CLAIR | STAG     | -    | NO VEGETATION    | 0       | WHITE SUCKER                  | ± 1              | -            | 1200                | 505                  |
|                                |       |           |          | 7    | POT. RICHARDSONI | MED.    | WHITE SUCKER                  | +1               | -            | 24.                 | 170                  |
|                                |       |           |          |      |                  |         | STRIPED SHINER HORNYHEAD CHUB | i:               | <b>-</b> 0   | 5<br>5<br>7         | 95<br>100-122        |
|                                |       |           |          | 1    |                  |         | ROCKBASS                      | +11              | -            | \$                  | 169                  |
|                                |       |           |          | ၈    | MYRIO. EXALBESC  | HIGH    | WHITE SUCKER                  | <b>.</b>         | -            | 3000                | 593                  |
|                                |       |           |          |      |                  |         | HORNYHEAD CHUB                | <b>±</b>         | 9            | 83                  | 91-119               |
|                                |       |           |          |      |                  |         | ROCKBASS                      | <b>-</b>         | -            | 8                   | 5                    |
|                                |       |           |          |      |                  |         | ROCKBASS                      | +11              | a            | 252                 | 115-212              |
|                                |       |           |          | 1    |                  |         | YELLOW PERCH                  | +11              | 4            | 248                 | 152-212              |
|                                |       |           |          | 4    | NO VEGETATION    | 0       | HORNYHEAD CHUB                | ±                | 15           | 226                 | 97-122               |
|                                |       |           |          |      |                  |         | ROCKBASS                      | +11              | 4            | 069                 | 170-250              |
|                                |       |           |          |      |                  |         | YELLOW PERCH                  | -                | -            | 12                  | 50                   |
| •                              |       |           |          |      |                  |         | YELLOW PERCH                  | ÷                | 42           | 2145                | 120-251              |
|                                |       |           | FAWN     | -    | POT. PRAELONGIS  | FIG     | WHITE SUCKER                  | +                | -            | 204                 | 267                  |
|                                |       |           |          |      |                  |         | ROCKBASS                      | +11              | 8            | 282                 | 170-205              |
|                                |       |           |          | 7    | NO VEGETATION    | c       | ROCKBASS                      | +11              | -            | 97                  | 163                  |
|                                |       |           |          | 6    | POT. NARROW      | HIGH    | PUMPKINSEED                   | +11              | -            | 89                  | 147                  |
|                                |       |           |          |      |                  |         | YELLOW PERCH<br>Yellow Perch  | . <del>.</del> . | - 4          | 52 5                | 107<br>129-134       |
|                                |       |           |          | 4    | CHARA SPP.       | LOW     | ROCKBASS                      | +11              | -            | <b>8</b>            | 161                  |

O WHITE SUCKER ROCKBASS YELLOW PERCH HIGH NO FISH CAUGHT ROCKBASS ROCKBASS YELLOW PERCH HIGH YELLOW PERCH LOW 1 POT. RICHARDSONI POT. RICHARDSONI NO VEGETATION CHARA SPP. ო RUSSELL

413-525 160 127-258 163 163 161 151-154

\*\*\*

| APPENDIX<br>HOOPNET ( | APPENDIX<br>HOOPNET CATCH DATA |          |             | VEGETATION       | LION              |  |             | Ę            | FISH                  |                                 |
|-----------------------|--------------------------------|----------|-------------|------------------|-------------------|--|-------------|--------------|-----------------------|---------------------------------|
| DATE                  | RIVER                          |          | STA.<br>NO. | DOMINANT<br>TAXA | DENSITY           | SPECIES  | LIFE        | TOTAL<br>NO. | TOTAL<br>WT.<br>(G)   | LENGTH<br>RANGE (MM)            |
| 10/ 4/84              | DETROIT                        | BELLE    | -           | POT. RICHARDSONI | HIGH              |  | + + +       | - 9 % -      | 8<br>7.5<br>7.5<br>8  | 104<br>70-104<br>120-131<br>97  |
|                       |                                |          | 8           | NO VEGETATION    | 0                 | YELLOW PERCH<br>ROCKBASS<br>ROCKBASS             | +           | ed me.       | 55<br>72<br>124       | 77 - 88<br>120-135              |
|                       |                                |          |             |                  |                   | PUMPKINSEED<br>SMALLMOUTH BASS<br>YELLOW PERCH   | <u>.</u>    |              | 3 2 2                 | 98<br>44<br>2                   |
|                       |                                |          | က           | MYRID. EXALBESC  | MED.              | ROCKBASS<br>ROCKBASS<br>YELLOW PERCH             | ++          | a            | 40<br>42<br>42        | 91-108<br>118<br>156            |
|                       |                                |          | 4           | NO VEGETATION    | 0                 | ROCKBASS<br>VELLOW PERCH                         | <u> </u>    | 4-           | 4<br>0.00<br>0.00     | 160-195                         |
|                       |                                | HENNEPIN |             | <b>4</b>         | ron               |  | <u>+</u> +  | 1-1-         | 90<br>807             | 144-185                         |
|                       |                                |          | 7           |                  | MED.              | SMALLMOUTH BASS                                  | H           | -            | 28                    | 106                             |
|                       |                                |          | ო           | VALLISNERIA AMER | H GH              | ROCKBASS<br>YELLOW PERCH                         | <u> </u>    | -=           | 8<br>8<br>8<br>8<br>4 | 162<br>144-168                  |
|                       |                                |          | 4           | NO VEGETATION    | 0                 | HORNYHEAD CHUB<br>YELLOW PERCH                   | ± 11        | - 6          | 32<br>755             | 120<br>134 - 196                |
| ٠                     |                                | STONY    | +           | 10. E            | HIGH              | STONECAT<br>ROCKBASS                             | +11         |              | 108<br>228            | 232<br>230                      |
|                       |                                |          | 8           | NO VEGETATION    | 0                 | CHANNEL CATFISH<br>ROCKBASS                      | + 11        | e -          | 2122                  | 328-471<br>225                  |
|                       |                                |          | 6           | MYRIO. EXALBESC  | H <sub>0</sub> II | AMERICAN EEL<br>WALLEYE                          | +111        |              | 360<br>1100           | 602<br>472                      |
|                       |                                |          | 4           | NO VEGETATION    | 0                 | ALEWIFE<br>STONECAT<br>ROCKBASS<br>BLACK CRAPPIE | 0 + + 1 + 1 | 2 <b>8</b> 0 | 20<br>804<br>178      | 84- 86<br>115-248<br>156<br>227 |

And the Anthonous of the page of the second second

APPENDIX R

ANOVA Tables for Fish

1

TO PROJECT OF A COMPANY PROSPERSOR OF THE

. . . .

Harasta Carlos

## LCCATICA+STAG

|                         | <u>—</u> <u></u> |                          | LAL_LINEAR E | COELS PACC       | ECLAE   |                          |                 |            |
|-------------------------|------------------|--------------------------|--------------|------------------|---------|--------------------------|-----------------|------------|
| CEFERCENT VARIABLE S    | -                |                          |              |                  |         |                          |                 |            |
| SCUPCE                  | CF               | SUM OF SCLARES           | PEAK         | SCLARE           | F VĂLUÉ | FA F                     | R-SCLARE        |            |
| FCCEF                   | 15               | _ 215.53266575 _         | 11.34        | 363525           | 1.52    | C.179?                   | C + 2 8 1 2 2 5 | _£6.5226   |
| ERACA                   | ac               | 145.01766507             | 7.45         | C89425           |         | ACCT PSE                 | SQR 1           | OTC PEAN   |
| "CCHRECTER" TOTAL       |                  | 264.55675482             |              |                  |         | 2.72963262               | 3.              | 14(25518   |
| SCLACE                  | CF               | TYPE 1 55                | F VALLE      | FR F             | CF      | TYFE II SS               | FVALLE          | PR F       |
| 1840                    | 1                | 23.25009272              | 2.13         | C.C923           | . 1     | 22.29609272              |                 | C.C522     |
| PÇATH                   | 4                | 145.65726854             | 4.67         | C.CC66           | •       | 145.09326854             |                 | C. (Cee    |
| TEAPOPENTE              | 4                | 30.04427186              | 1.61         | C.4267           | •       | 30.04427186              |                 | (.4261     |
| CERSITY<br>YEARACERSITY |                  | C.Cee:C546               | (.(1         | C-5257           |         | C.0e650940<br>G.95643C09 |                 | C. 7225    |
| PCATE OCENSITY          |                  | C.55643CC5<br>5.82361432 | C.12<br>C.20 | (.7235<br>(.5379 | 1       | 5.82361433               |                 | 6.5275     |
| TEAR PEATH CEASITY      | 7                | 10.25266261              | (.24         | C. 645C          | 7       | 10.25260261              |                 | Ç.845C     |
| SELACE                  | EF               | TYPF [1] 55              | F VALLE      | FR F             | CF      | TYPE IV SS               | F VALLE         | PR F       |
| YEAR                    | 1                | 27.25405272              | 3.13         | C.C923           | 1       | 23.29609272              |                 | 0.0922     |
| PCRTH                   | 4                | 145.05326654             | 4.67         | (.(C66           | 4       | 145.09326854             |                 | C.CC66     |
| YEAROPCATE              | . 4              | 20.04427166              | 1.01         | C.4267           | 4       | 30.04427186              |                 | (.4267     |
| CEASITY                 | 1                | C.C665C54C               | C.C1         | C.5257           | 1       | 0.06650540               |                 | C. SE 57   |
| YEAP+CERSITY            | 1                | C.55643CCS               | C-13         | C. 7235          | i       | 0.95643009               |                 | C. 1235    |
| PCATHOLERS ITY          |                  | 5.02761473               | C.2C         | C. 9379          | •       | 5.82261421               |                 | C.5379     |
| YEAROPCATH + CERSITY    | 4                | 10.25266261              | C.24         | (.E45C           | 4       | 10.25248261              | 1 (.24          | (. { 4 5 ( |

## LCCATICN+514G

|                     |            | GENER                    | AL LINEAR P  | CDELS_FRCC       | ECLAE   |                          |           |        |
|---------------------|------------|--------------------------|--------------|------------------|---------|--------------------------|-----------|--------|
| CEFERCERT VARIABLE  | SCR TCTA S | CATITOTAL SPECIES        | + .51        |                  |         |                          |           |        |
| SCUPCE              | CF         | SLP OF SCLARES           | PEAR         | SCLARE           | F VALUE | FR F                     | -SCUARE   | C.v.   |
| JCCEL               |            | . 4-10685878 .           | C+21         | £12C£7           | 1.55    | 0.165?                   | .559312   | 1.2565 |
| EARCH               | 20         |                          |              |                  |         |                          | SQR TOTA  |        |
| CCFRECTEC TCTAL     | 25         | · · e.essieicz           |              |                  |         | .37242163                | 1,40      | 44766  |
| Stirce              | - ce       | TYPE L'SS                | F VALLE      | FR F             |         | TYPE II SS               | F VALLE P | R F    |
| PCATE               |            |                          | 1.26.        |                  |         | C.189558C5.              |           |        |
| TEAPOPENTE          | :          | 2.81616467<br>C.2111C215 | 5.C5<br>C.28 | C.CO56<br>C.E213 | •       | 2.81616487<br>0.21110215 |           |        |
| CENSITY             | ī          | C.C2C72242               | (.15         | C. 7C37          | 7       | C.02075242               |           | 1627   |
| TEAR CEASITY        | i          | C.Zlelizce               | 1.55         | (.2275           | i       | C.216122Ce               |           |        |
| PCATPOCEASITY       | 4          | C.21687542               | (.19         | C. 6141          | 4       | 0.21687942               |           | . E141 |
| TERPOPERTH-CERSITY  | •          | . C.42571277             | (.76         | C.55C6           |         | 0.42571277               |           |        |
| SCLPCE              | C F        | TYPE III SS              | F VALLE      | FP F             | , CF    | . TYPE IV SS             | F VALLE P | R F    |
| 7E28                | 1          | C.165556C5               | 1.36         | C-2574           | 1       | 0.18955865               | 1.2e (    |        |
| PCATH               | i          | 2.61616467               | 1.01         | C. CC54          | i i     | 2.61616467               | 1.63      |        |
| YESAOPEATH "        | 4          | C-2111C215               | C.38         | (. 2213          | 4       | C.2111C215               |           |        |
| CEASITY             | 1          | C.C2C75242               | C.15         | 6.7037           | i       | 0.02075242               |           | .1627  |
| YEAR OCERSITY       | 1          | C.216122Ce               | 1.55         | C.2275           | i       | 0.21612206               |           | . 2275 |
| PCASH OCERSITY T    | · · ·      | C.21687542               | C.39         | C. E141          | 4       | 0.21667542               |           | 1.8141 |
| TEAR*PCATH *CEASITY | 4          | C.42571277               | C. 18        | C.55C6           | 4       | C.42571277               | C.TE C    | 3321.0 |

## LCCATICN=STAG

|                       |                 | GERER              | AL LINEAR | CCELS FACC | ECUPE  |              |          |          |
|-----------------------|-----------------|--------------------|-----------|------------|--------|--------------|----------|----------|
| CEFERCENT VARIABLE SE | CP PER          | SCRTIPERCY MLPBERS | + .51     |            |        |              |          |          |
| SCLPCE                | C.F.            | SLP OF SQLARES     | PEAN      | SCLARE     | FVALLE | - FR F       | R-SCLARE | ·        |
| ₹ÇEŞL                 | 15              | 174-25622277_      | . 5.17    | 1138541 .  |        | 0.0834       | C.644233 | 164.4426 |
| EPRER                 | 20              | 57-CE1Ce25e        | 4.65      | 405315     |        | ACCT PSE     | 192      | PER PEAN |
| "CCFRECTEC TOTAL"     | <sup>-</sup> 25 | 271.22726574       |           |            |        | 2.20315154   |          |          |
| SCLECE                | CF              | TYPE 1 55          | F VALLE   | FR F       | cř     | TYPE IÌ S    | F VALLE  | PR F     |
| 7848                  | 1               | 15.56474662        | 4-12      | C. 0540    | 1      | 19.9847466   | 4.12     | 0.0540   |
| PEA 1#                | 4               | 102-72008755       | 5.34      | C.CC43     | 4      | 103.7200075  | 1.14     | - (,((4) |
| TEARAPCATE            | 4               | 26.76426263        | 1.46      | C.2461     | 4      | 26.7Ce2626   | 1.48     | (.246)   |
| CEASITY               | ,               | 2-01112231         | C.41      | C.5271     | 1      | 2.0111223    | C - 41   | (.5271   |
| YEAR CEASITY          | 1               | 3.61457355         | C.74      | C.3984     | 1 "    | 3.61457359   | C.74     | C.2584   |
| PCAIP+CEASITY         | 4               | 7-67776648         | C.4C      | (. 6055    | 4      | 7.6371664    |          | C.EC55   |
| 7E184PChT++CERS17Y    | 4               | 6.54176675         | (.44      | C.7783     | • .    | e.5417667    | C.44     | C.77E?   |
| SCLECE                | EF              | TYPE 111 55        | F VALLE   | ja f       | , CF   | TYPE IV S    | F VALLE  | PR F     |
| 16/6                  | 1               | 15.58474882        | 4.12      | C.C56C     | 1      | 19.9847488   | 4,12     | 0.0540   |
| PCPTH                 | 4               | 102.72008755       | 5.24      | C.CG43     | 4      | 103.72008759 |          | 6.6643   |
| <b>1EAF+PCATH</b>     | 4               | 28.70026262        | 1.46      | C.2461     | 4      | 26.7C424281  |          | C.2461   |
| CEASITY               | 1               | a.c111aa?1         | C-41      | C.5271     | i      | 2.0111222    |          | C. ! 211 |
| <b>YEAR CERSITY</b>   | 1               | 2.61427255         | C.74      | (.3984     | i      | 3.61457299   |          | C.2584   |
| >CPTH+CEAS   TY       | 4               | 7.61776648         | C-4C      | C. 2095    |        | 7.67776646   |          | C. ECS # |
| TEAPOPENTS OCEASITY   | 4               | 6.54176675         | C.44      | C. 7783    | 4      | E.54174C75   |          | C.1762   |

## LCC411CA+S1AG

| * - ***  |        | GENEI  | RAL LINEAR P                 | CDELS FACC   | ECLRE   |  |                            |               |
|--|--------|--|------------------------------|--|---------|--|----------------------------|---------------|
| CEFENCENT VARIABLE   | SC# #E |  |                              |  |         |  |                            | •             |
| SCLECE" "  | CF     | SUM OF SOLARES                                       | PEAL                         | SCLAFE   | F VALUE | TFR F  | R-SCLARE                   | c             |
| Man -  | 15     | 12.2235elle  | (.10                         | 126111   | 1.61    | C+1479   | C. (C!!!\$                 | 11.1614       |
| ERACA  | äC     | 6.06475516   | C.43                         | 423756   |         | CCT PSE  | SQR                        | RB FEAN       |
| "CCFRECTEC" TCTAL"   | 25     | 22.00672022  |                              |  | 0.6     | 5896734  |                            | 224E2ČE2      |
| SCLACE " "   | £#     | 17PE 1 55  | F VALLE                      | FR F   | CF      | " TYFE 11"S  | S F VALLE                  | <sub>PR</sub> |
| TESS PCATH PCATH PCATH CESSITY PESSOCESSITY PCATHOCENSITY TESSOCESTA |        |  |                              | C.5632<br>C.C166<br>C.C518<br>C.557C<br>C.6C82<br>C.8281<br>C.7624 | 1       | 0.0005483<br>6.8051464<br>4.5224341<br>0.125245<br>0.0262757<br>0.6404213<br>C.8034104 | 20C.CO _<br>16             | C.5622        |
| stuce  |        | TYPE 111 55  | F VALLE                      | F# F   | C#      | TYPE IV S  | S _ F VALLE _              |               |
| YEAR<br>FCATA  | 1      | C.CCC54F3C   | C.CC<br>2.52                 | C. 9632<br>C. Cles   | l.      | C.CC5483   | e (.(c                     | C.5622        |
| TEASOCEASITY PEASOCEASITY PEASOCEASITY                               | 1      | 4.52243417<br>C-12224418<br>C-C2621577<br>C-64C42126 | 2.63<br>C.25<br>C.C6<br>C.31 | C.C518<br>C.557C<br>C.ece2<br>C.ece2                               | 1       | 4.9224341<br>C.1253245<br>C.C262757  | 1 2.63<br>6 C.25<br>7 C.C6 |               |
| TEAPAPENTH-CERSITY   | 4      | C+8C241C47   | C.46                         | C.7624   | •       | C. EC 341C4  |                            | C. 1624       |

|                    |             |                   | LECATIO     | A-FALL           |                                     |                          |          |                  |
|--------------------|-------------|-------------------|-------------|------------------|-------------------------------------|--------------------------|----------|------------------|
|                    | <del></del> | GENER             | AL LIBEAR A | CDELS FAC        | EEF66                               |                          |          |                  |
| CEPERCENT VARIABLE | SER TETE    | SCRTITOTAL NUPBER | CF FISH + . | .51              |                                     |                          |          |                  |
| SCLACE             | C#-         | SUN OF SQLARES    | PEAN        | SCLARE           | FVALUE                              | FR F                     | R-SCUARE | C.V.             |
| MCCEL              |             | 57.52365767       | 9.11        | 1641512          | Je18                                | 0.2512                   | F_417325 |                  |
| ERRCR              | 22          | 164.46764466      | 4.89        | 426450           |                                     | RCCT PSE                 | SCR 1    | TOTC PEAK        |
| CCAPECTEC TOTAL    |             | 704-2603186       |             |                  |                                     | .20337618                | :        |                  |
| -sculce            | C.F.        | TYPE 1 SE         | "F MILLE    | ₽#               | · · · · · · · · · · · · · · · · · · | TYPE IT SS               | F VALLE  | PR F             |
| HEAR               | 1           | 5.88710540        | 1.21        | C.2827           |                                     | 2.81017903               |          | .C.454E          |
| PEASAPCATE         | :           | 42.54312562       | 2.15        | C-1034           | •                                   | 35.92341557              |          | C.1553           |
| CEASITY            |             | 11.55655614       | 6.60        | C.6699<br>C.C372 | ;                                   | 22.89677872              |          | (,(212           |
| YEAR CEASITY       | - :         | 4.65054578        |             | (.3363           | · ;                                 | £.21254650               |          | C.2679           |
| PCATH+CEASITY      | i           | 7.45452119        | (.35        | C. 2143          | •                                   | 7.49652115               |          | C. (162          |
| YEAR PEATH CEASITY |             | 1-46641444        | 6.15        | C. 6568          | 2                                   | 1,48841444               | C.15     | Ciéses           |
| SCLPCE             | CF          | TYPE [[] 55       | F VALLE     | FR F             | CF ,                                | TYPE IV SS               | F VALLE  | PR F             |
| 1848               | 1           | 4.81222227        | C.55        | C - 33C2         | 1•                                  | 2.62854563               |          | €,465€           |
| PENTE              | 4           | 46,51424124       | 2.05        | C-1171           | 4.4                                 | 40.13643520              |          | C.1158           |
| TEAR - PCATE       | 4           | 6.82CC43C         | C-ST.       | C.7320           | 4.                                  | 10.06397360              |          | 0.3272           |
| CENSITY            | !           | 14.57555742       | 2.05        | (. (525          | 1.                                  | 22.64023016              |          | C.C42C<br>C.2676 |
| YEARACERS ITY      |             | £.2ECE234e        | 1.25        | C.2676           | 10                                  | 6.28082346<br>7.12426276 |          | 0.1296           |
| PCDIP *CEASITY     | :           | 7.90004525        | C.35        | C. Elel          |                                     |                          |          |                  |
| YEAROPCHTHOCERSITY | ż           | 1.46641444        | C-15        | C.8588           | 2                                   | 1.48841444               | C.15     | (                |

## LCCATICN-FARA

|                    |          | GENER              | AL LINEAR P | CDELS PAC | CECLRE        |             |         |            |
|--------------------|----------|--------------------|-------------|-----------|---------------|-------------|---------|------------|
| CEFERCENT VARIABLE | SER TETR | SCRTITOTAL SPECIES | + .51       |           |               |             |         |            |
| SCLECE             | CF.      | " SUM OF SCLARES   | PEAR        | SCLARE    | F VALUE       | FR F R      | -SCUARE | C.v.       |
| PCCEL              | 17.      | 2.41102489         |             | 102558    | 1.21          | 0.2296 C    | .464185 | 44-1715    |
| EAACA              | 22       | 2.56511580         | C-11        | 677799    |               | ACCT HSE    | SOR     | TOTH HEAN  |
| CCRRECTES "TCTAL"  | 35       | 4-58015085         | · · · -     |           | 0.            | 24172795    |         | .54126445  |
| SCLACE             | · ~ cr   | " TYPE 1 55"       | F VALLE     | FB F      | <sub>CF</sub> | TYFE 11 SS  | F VALLE | PR F       |
| YEAR               | 1        | C+C2516C64         | C.2C        | C.5686    | 1             | 0.05347185  | Ç.46    | . 6.5057_  |
| PENTH              | 4        | 1.17665545         | 2.52        | C. C765   | • . —         | 1.03521165  | 2.22    | C.1CC4     |
| YEAR4PCATE         | 4        | C.27e21755         | C. E1       | (.5349    | 4             | C.46052456  | 1.00    | (.4271     |
| CEASITY            | 1        | C.28855226 _       | 2.47        | C-13C0    | 1             | C.20055236_ | 2.47    | _ ( ,12( C |
| "YEAR+CEASITY"     | 1        | C.Czecses          | C.56        | C. CCSC   | 1             | 0.16554639  | 1.42    | C.2465     |
| PCATP+CEASITY      | •        | C.21717172         | C+48        | C. 6130   | •             | 0.21717172  | C.68    | C. £128    |
| AENI-DCPIP-CERRITA | <b></b>  | C-16471465         | C+15 _      | C.4659    |               |             | C.15_   | C,4655_    |
| SCLACE             | £F .     | TYPE 111 55        | F WALLE     | PR F      | CF            | TYPE IV SS  | F VALLE | PRE        |
| 78.00              | ,        | C.11!1E71E         | C.55        | C.2314    | £#            | C.6522C5C2  | C.45    | C.51C7     |
| PCATE              | 4        | 1.13734512         | 2.43        | C. C776   | 4.            | 1.67118465  | 2.25    | 0.0517     |
| <b>VESPOPCATE</b>  | 4        | C.45279754         | 1.05        | C.4020    | 40            | C.44256516  | C. 55   | C.4554     |
| CEASITY            | 1        | C-13623CC3         | 1.12        | C. 3C24   | 1*            | C.25C4E22C  | ē.45    | (.125(     |
| YEAR+CEASITY       |          | C.15224632         | 1.20        | (.265#    | 1.            | C.15556835  | 1.30    | (.;;;      |
| PCATP +CEASITY     | 4        | C+?1eC1375         | (. ( )      | C. E154   | 44            | 0.12522113  | C.27    | (.6523     |
| YEAROPCATE CEASITY | i        | C.184714e5         | (.75        | C.4659    | 2             | G.18471465  | C.75    | C.4659     |

#### LCCATICA-FASA

|                       | <u></u> | GENER                      | AL LINEAR P  | CCELS FAC | CECLAE   |                          |                |                            |
|-----------------------|---------|----------------------------|--------------|-----------|----------|--------------------------|----------------|----------------------------|
| CEFENCENT VARIABLE :  | CP PEP  | SCRTIPERCH KLPBERS         | • • • • •    |           |          |                          |                |                            |
| SCLACE                | EF      | SUP OF SQUARES             | PEAR         | SCLARE "  | P VALUE  | - FR F                   | SCUARE         | c.v.                       |
| PEGER                 | 11      | 73,26414956_               | 4.30         | 545584 _  | . 0.41 _ | 0.6683 Ç                 | .26476}        | 115,2262                   |
| E49C9                 | 77      | 117.14566615               | 5.32         | 448573    |          | ACCT PSE                 | 50R            | PER MEAN                   |
| CCPARCTEC TCTAL       | 25      | 150.41262571               |              |           |          | .30759306                | 1.             | ત્રાદેશ છે.                |
| SCURCE TO THE         | · CF    | TYPE 1 SS                  | F VALUE      | . F# F    | . tf     | TYPE II SS               | F VALLE        | . PR F                     |
| YEAR<br>PCATH         | 1       | 1.56456526                 | _ (.25       | C.5932    | <b></b>  | C.15596635               | _ c.cs         |                            |
| 7EABOPCATE            | •       | 21.28198989                | 1.00         | C.429C    | 4        | 17.55155493              |                | C.5228                     |
| CENSITY               | •       | 14.41165662<br>21.50542132 | C.1E<br>4.C4 | (.5562    | •        | 14.20944467              |                | C-6151                     |
| VEASOCEASITY          | · ;     | 3.22572424                 |              | C.4447    |          | 21,50542132              |                | C.C.E.                     |
| PCATE OCEASITY        |         | 6.54471677                 | (.40         | C. 8C57   | 1        | 4.32023060               |                | C.2775                     |
| YEAR-PEATH VEEKS ITY  |         | C.53591744                 | č. čš        | C.9514    | i        | 6.54471877<br>0.52951746 |                | ( + ( ! ) )<br>( + ( ! ) ) |
| រូបូល ្រ              | CF .    | TVPE_[11 55                | FWILE        | FR #      | tf_      | _ TYPE IV SS             | <u>f</u> vølle | PR F                       |
| YEAR                  | 1       | C.78452222                 | C. 15        | C. 704 #  | 1.       | 0.12626566               | (.62           | C. E 75C                   |
| PCATE                 | 4       | 21.43106560                | 1.01         | C.4256    | 44       | 22.02183397              | 1.03           | C.412C                     |
| 7EA84PCATH            | 4       | 14.23692649                | Cett         | C. 621G   | 4.0      | 14.21664564              | 6.61           | C. 6214                    |
| CERSITY               | 1       | 14.12135742                | 2.65         | C.1177    | 1.0      | 20.20164229              | 2.61           | C.CE27                     |
| YEAR CERSITY          | 1       | 4.25508111                 | C-EC         | C.3810    | i•       | 4-25500111               | C.EC           | C.361C                     |
| PCA1F+CEASITY         | 4       | 6.51716242                 | 6.46         | C.FC46    | 4.0      | 8.06266663               | C.16           | C. 8715                    |
| TEAR OPENTH OF EASITY | i       | C.52551746                 | C. C5        | C.5516    | 2        | 0.52951746               | t.t:           | C-5116                     |

## LCCATICA-FASA

#### GENERAL LINEAR PCCELS PRCCECURE

| CERENCENT ANDIVELE  | SCA AE | SCRTIROCK BASS RE | PEERS + .51 |           |         |              |           |           |
|---------------------|--------|-------------------|-------------|-----------|---------|--------------|-----------|-----------|
| SCLAGE              | CF     | SUM OF SQUARES    | PEAR        | SCLARE -  | F VALUE | FR F         | R-SCUARE  |           |
| PCCEL .             | 17     | 14.27416517       | , C. E3     | 1575468   | 3.20    | 0.0045       | C-713223_ | 25,0552   |
| ERRCR               | ii     | 1.62874652        | (.25        | 565221    |         | ACCT PSE     | SQ        | R AB FEAN |
| CCSSECTEC TCTAL     | 25     | 15.50525610       | •           |           | ****    | 0.50501835 ~ |           |           |
| SCLACE              | " CF   | TYPE I SS         | F VALLE     | FR *** F  | ¿F      | TYFE II'S    | S F VALLE | PR F      |
| 7840                | 1      | C.1eC21ees        | 2.57        | (.(967    | ,       | C-9641641    |           | (.0626    |
| PEATE               | 4      | 10.01512562       | 5.75        | C. COC1   |         | 9.7470455    |           | 2.0001    |
| TEARSPEATE          | 4      | 1.01212566        | 6.55        | C.4334    | 1       | 0.4898688    |           | 6.7516    |
| CEASITY             | 1      | C.742CE124        | 2.56        | C.1626    | ĭ       | C.742CE12    |           | C-1026    |
| PEAR-CELSITY"       | 1      | C.7C:24Ce1        | 2.76        | C.1116    | • ; -   | 1.3623652    |           | ~ 6.6257  |
| PCATE+CEASITY       | 4      | C.46762762        | 6.57        | (.4462    | i       | C.9878276    |           | 6.4462    |
| TEARSPEATH OCENSITY | i      | C.C4861292        | c.ic        | C.5097    | ż,      | 0.0486125    |           | C.5C57    |
| SCLACE              | C F    | TYPE III SS       | F VALLE     | FB F      | CF      | TYPE IV S    | F VALLE   | PR F      |
| YEAR                |        | 1.46665676        | 2.62        | C. C244   | 1.      |              |           |           |
| 41434               | 4      | 10.44762367       | 16.31       | (.((()    |         | C.9518656    |           | C.(44E    |
| <b>YEAROPCHTP</b>   | 4      | C.46667146        | 2.48        | (.7517    |         | E - 860C 1C4 |           | (.(((2    |
| CEASITY             | ſ      | C.16164551        | (.71        | C.4083    |         | C.490273E    |           | 6.7500    |
| YEAR+CENSITY        | i      | 1.27128525        | 5.24        | (. (363   | 1.      | 0.6824224    |           | C.1167    |
| PEATHOCEASITY       | 4      | C.58166176        | (.51        | [-446]    | 4.      | 1.2712852    |           | 0.0303    |
| VEAPOPEATH OCEASITY |        | C.(4861252        | 6.16        | (.5057    | •       | C.4826455    |           | C+(21)    |
|                     | -      | ********          |             | (.,,,,,,, | 4       | C.C400125    | . 6.16    | (.5(5)    |

| FCCV. | 11 | Ch | - 8 | ĿS | SE |  |
|-------|----|----|-----|----|----|--|
|-------|----|----|-----|----|----|--|

|                       |          | GENER                    | AL LINEAR PCDE | LS FRCC | ECLAE   |                                  |                            |
|-----------------------|----------|--------------------------|----------------|---------|---------|----------------------------------|----------------------------|
| CEPENCENT VARISELE    | SCB TCTC | SCRTITOTAL NUPBER        | CF F15H + .51  |         |         |                                  |                            |
| SCLACE                | EF.      | SLM OF SOLARES           | PEAN SCL       | ARE     | F VALUE | FF F R                           | -SGLARE C.V.               |
| MILL                  | 15       |                          | 7.203.00       | 706     | 1.98    | 0.0696                           | . 622502                   |
| ERACA                 | 20       | 72.86434445              | 3.64321        | 722     |         | ACCT PSE                         | SCR TOTE PEAN              |
| CCFFECTEC TETAL       | 25       | 205.66247692             |                | -       |         | 1.90872136                       | ั้งเกากรับ                 |
| SCLACE                | CF       | TYPE I SS                | F VALLE F      | a F     | CF      | TYFE II SS                       | F VALLE PR F               |
| YEAR                  | 1        | 10.0044921               |                | .1005   | r       | 9.81402522                       | 2+65_, C+1164              |
| PCATE                 | •        | 54.66535162              |                | .C196   | 4       | 54.75779450                      | 2.16 C.C155                |
| YESPOPCATE<br>CEASITY | •        | 56.12606553              |                | . C17C  | •       | 55.53247704                      | 2.61 C.C164                |
| TEARACERS LTV         |          | 2.22541541<br>C.25477584 |                | .4432   |         | 2.22541541                       | C.61 C.4472                |
| PCATE OCEAS LTY       | :        | 4.11226264               |                | .7454   | ı,      | 0.5022785 <b>8</b><br>4.11226364 | C.14 (.7143<br>C.26 C.666C |
| TERPPEATH CEASITY     | 4        | 1.6:77:1:7               |                | .7087   |         | 1.05775157_                      |                            |
| SCLECE                | CF       | TYPE 111 55              | F VALLE F      | R F     | CF _    | TYPE IV SS                       | F VALLE _ PR F             |
| YEAR                  | 1        | 5.17872566               |                | .1201   | 1       | 5.17872566                       | 2.52 C.1281                |
| PCATH                 | 4 .      | 53.75447632              | 3.69 0         | .czca   | 4       | 53.79447622                      | 2.45 _C,C2C8               |
| YEAFOPCATH            | 4        | 54.81655157              |                | -C194   | 4       | 54.81855157                      | 2.7e C.C154                |
| CERSITY               | 1        | 1. F171552C              |                | .4861   | 1       | 1.81775520                       | C+5C C+4EEL                |
| YEAROCENSITY          | . 1      | C.Selezesz               |                | .6987   | l       | C - 5e 1e 2e 52,                 | C.15 C.65E1                |
| PCATH CEASITY         | 4        | 4.72567167               |                | . 2765  | 4       | 4.32583167                       | C.2C C.6765                |
| YEAR+PCATH+CEASITY    | 4        | 7.65775157               | C-54 C         | . 7087  | 4       | 1.65775157                       | C.54 C.7CE7                |

## LCCATICA-RLSSELL

|  |              | GENER                                  | IAL LINEAR P         | CDELS FAC                  | CECLFE .    |                                  |                    |                            |
|--|--------------|--|----------------------|----------------------------|-------------|----------------------------------|--------------------|----------------------------|
| CEFERCENT VARIABLE SC                    | A TCTN       | SCRIFTOTAL SPECIES                     |                      |                            |             |                                  |                    |                            |
| SCLECE                                   | EF           | SUM OF SCLARES                         | PEAR                 | SCLAPE                     | F VALUE     | FR F                             | F-SCUARE           | c.v.                       |
| )CCEL                                    | 19           | 2.52446424                             |                      | 545518                     | 1.94        | 0.6746                           | 0,648962           | 16.2255                    |
| ERACR                                    | 20           | 1.50561625                             | (.(5                 | 545CE2                     |             | FCCT ≠SE                         | SCR                | TOTH PEAK                  |
| CCFRECTEC TCTAL                          | 25           | 5.43430048                             |                      |                            |             | 0.30901589                       |                    | . e e 4 5 7 5 5 1          |
| SCCACE                                   | ··· EF       | TYPE I SS                              | F VALLE              | FR F                       | CF          | TYPE II                          | SS'- F VALUE       | PR F                       |
| TEAR<br>FCATH<br>TELROPCATH              |              |  | 2.16<br>3.64<br>1.71 | C.1573<br>C.C219<br>C.1868 | 1           | G.15Ce42<br>1.386455<br>G.466215 | CS 3.64            | C.2224<br>C.C221<br>C.2234 |
| CENSITY<br>PERFECENSITY<br>PCATHOCERSITY | 1            | C.23149898<br>C.C876C949<br>C.63861C89 | 2.42<br>C.52<br>1.12 | C.1351<br>C.3496<br>C.1842 | 1 1 4       | 0.221496<br>0.116663<br>0.658610 | e7 1.16<br>e5 1.72 | C.1351<br>C.2545<br>C.1642 |
| TEAR-PEATE CERSITY                       | · <b>*</b> · | C-Seileksa                             |                      | C.5557                     |             | 0.295168                         | 24                 | C.55 <u>51</u>             |
| scrice                                   | CF           | TYPE III ES                            | F VALLE              | FR F                       | CF          | TYPE IV                          | SSF VALLE          | _ PB F                     |
| PEATP                                    | 1            | C-12256161<br>}-48441255               | 1.39                 | C.2518                     | 1           | 0.132961                         | C5                 | C-2518<br>C-C111           |
| TESPOPENTS<br>CEPSITY<br>TESPOESSITY     | 1            | C+417C255;<br>C+1613EC5C<br>C+119875C2 | 1.05                 | C.1829<br>C.2837           | 4<br>1<br>1 | C.417C35<br>O.18178C<br>O.115E75 | 9C 1.5C            | (.?E?4<br>(.1E25<br>(.2e17 |
| PCATH ACERSITY<br>VEARABLETH ACERSITY    | 4            | C.614C4C2C<br>C.25916824               | 1.76<br>C.77         | C.1756<br>C.5557           | •           | C.£7404C<br>C.2551££             |                    | C.1756<br>C.5557           |

#### LCCATSCN-FLSSELL

|                                    |         | GENER             | IAL LINEAR P | CCELS FACC | ECUPE           |                   | <u>-</u>      |            |
|------------------------------------|---------|-------------------|--------------|------------|-----------------|-------------------|---------------|------------|
| CEPENCENT VARIFELE                 | SER PER | SCRTIFERCH NUPBER | . + .5)      |            |                 |                   |               |            |
| SCLACE                             | C F     | SLM OF SQLARES    | PEAR         | SCLAPE "   | F VALUE         | " PR F "          | R-SCUARE      | C.v.       |
| *CCEL                              | 35      | 71.4520(66)       | 3.11         | 494782     | 3,31            | 0.0053            | C.198525      | . \$2,4448 |
| ERFCR                              | 26      | 22.85525622       | 1.14         | 276256     |                 | PCCT PSE          | \$6           | R PER MEAN |
| CCOPECTEC TETAL                    | 25      | \$41,80726782     |              | -          | •               | 1.04500052        |               | 2.02622714 |
| "SCLECE" "                         | CF .    | 1YPE 1 55         | F VALLE      | FR F       | · <sub>CF</sub> | TYPE TI           | SS F VALLE    | E PA F     |
| YEAR                               | 1_      | 5.44345021        | 6.26         | C. COS4 _  | <b>_</b> ₹      | 9.544759          |               |            |
| PEATH                              | 4       | 20.78827221       | t.74         | C.CO13     | 4               | 30.773390         |               |            |
| YEAROPCATH                         | 4       | 15.61851855       | 3.29         | C. C318    | 4               | 15.00406          |               |            |
| CERSITY                            | 1       | 2.25125202        | . 2.01       | C.1722     | . 1             | 2.251293          |               |            |
| YEAP+CERSITY                       | 1       | C.EC745416        | (.10         | (.4119     | ı               | C.822190          |               |            |
| >CATHOCEASITY                      | 4       | 4.0270?1?5        | (.88         | C.4929     | 4               | 4.027031          |               |            |
| YEARAPCATHACEAS ITY                | 4       | 5.56024152        | 2.10         | C.1163     |                 | 9.580241          | 153, , 2 • 1) | C-1153     |
| SCLPCE                             | C F     | TYPE 111 55       | F VALLE      | PA F       | CF              | TYFE IV           | SSF. VALLE    | E PR. F.   |
| YEAR                               | 1       | 6.26716272        | 7.23         | C.C141     | 1               | 0.267183          |               |            |
| PCATH                              | 4       | 30.56016276       | £.77         | C. CC13    | 4               | 30.540163         | 11E           |            |
| 1E484PCATH                         | 4       | 14.71767126       | 3.22         | C.C341     | 4               | 14.713671         |               |            |
| CEASITY                            | i       | 1.55619584        | 1.71         | C.2C63     | ı               | 1.990155          |               |            |
| YEAR+CERSITY                       | 1       | C.5422(25)        | C. E4        | C.3655     | 1               | C.9632 <b>6</b> 3 |               |            |
| PCATH OCEASITY                     | 4       | 4.11267588        | (,50         | C.4826     | 4               | 4.113079          |               |            |
| 16 4 6 4 6 C 6 T 6 4 C 6 A 5 I T Y | 4       | 9.58024152        | 2.10         | C.1193     | 4               | 9.580241          | 152 2.31      | C-1153     |

| LOCA | TICA-RLSS | ELL" |
|------|-----------|------|

|                     |               | GENER                     | AL LINEAR PCOELS FACE      | :#FLP#  |            |                                  |
|---------------------|---------------|---------------------------|----------------------------|---------|------------|----------------------------------|
| CEFERCENT VARIABLE  | SCR FE        | SCREEROCK BASS NLP        | DERS + .5)                 |         |            |                                  |
| SCLACE              | CF            | SLM OF SQLARES            | PEAR SCLAPE                | F VALLE | F# F       | M-SCLARE C.V.                    |
| PCCEL               | 26            | 25.18559040               | 1.32557844                 | 3.36    | 0.0049     | C.1616C34C.1256                  |
| ERPCR               | 26            | 7.66276252                | C.2541252C                 |         | FCCT PSE   | SCR RB PEAR                      |
| CCRRECTEC TCTAL     | 125           | " 32.C6565425"            |                            |         | 3.62764170 | 1,56465651                       |
| SCLACE              | <sub>CF</sub> | TYPE 1 SS.                | F VALLETTE FOR F           |         | * TYPE 11  | SS F VALLE PR F                  |
| YEAR                | 1             | 2.27507224                | 6.64 (.023)                | 1       |            | 45 4.54C.C2EC_                   |
| YEAR<br>PCPTH       | 4             | 2.275C7224<br>14.25774C17 | 4.C4 C.CCC2                | 4 -     | 14.253490  |                                  |
| TEAPAPERTH          | 4             | 1.91854254                | 1.22 (.3349                | 4       | 1.753725   |                                  |
| CEASITY             |               | 2.25645576                | 5.43C.0295_                | 1       | 2.296495   | 76 5.63 C.C?**                   |
| 1656476699111       | 1             |                           | 1145 615010                | 3       | 0.621264   |                                  |
| PCATHOCEASITY       | •             | 2.4363572C<br>1.23221375  | 1.55 C.2271<br>C.76 C.556C | 4       | 2.438355   | 2C 1.55 (.2271<br>75 (.78 (.5500 |
| TEAR PEATE TEAS ITY |               | 1.23321113                |                            |         |            |                                  |
| scurce              | CF.           | TYPE 111 55               | F MALLE FR F               | tf.     | TYPE IV    | SS _F YALLE, _PR _F.             |
| 16/8                | 1             | 2.24150026                | 5.45 C.C271                | 1       | 2.241500   |                                  |
| PCATH               | 4             | 14.25390526               | 5.64 C.GOC2                | 4       | 14.253905  |                                  |
| TE SPOPCATE         | 4             | 1.8455555                 | 1.17 (.3535                | 4       | 1.845596   |                                  |
| CEASITY             | 1             | 2.15444251                | 5.57 C.C205                | 1       | 2.196662   |                                  |
| TE FRACERS ITY      | 1             | C.ees23411                | 1.70 0.2074                | 1       | 0.669834   |                                  |
| PCATHOCEASITY       | 4             | 2.36576365                | 1.51 (.236)                | 4       | 2.305763   |                                  |
| A                   |               | 1 29221226                | C.78 C.55CC                |         | 1.288213   | 78 (.38 (.5500                   |

## LCCATICA-BELLE ISLE

|                     |          | CENER             | AL LIKEAR, A | COELS FACE | e Cure  |           |            | •          |
|---------------------|----------|-------------------|--------------|------------|---------|-----------|------------|------------|
| 2134184V F4224\$432 | SC# TCTC | SCRTITOTAL NUPBER | CF FISh + .  | 51         |         |           |            |            |
| ECLICE              | <u></u>  | SLP OF SCLARES    | PEAR         | SCLARE     | F VALUE | FR F      | P-SCUARE   | C.V.       |
| ми.                 | 15       | 24.15667246       | 1.27         | 362487     | 1.02    | 0.4782    | C.452579   | 26.6555    |
| ERFCR               | ac       | 24.68616216       | 1.24         | 446211     |         | FCCT PSE  | 5CR        | TOTE MEAN  |
| CCARECTEL TOTAL     | 25       | 45.00102462       | -            |            | · ····  | 11552042  |            | 2.52752655 |
| SCLPCE              | C #      | TYPE I SS         | F VALLE      | FR F .     | ťř ···  | TYFE II   | SS F VALLE | PR F       |
| 1648                | 1        | 1.21626674        | 1.06         | C.316C     | 1       | 1.467115  |            |            |
| PC>7F               | 4        | 8.97629562        | 1.60         | C.1678     | 4       | 9.080733  |            |            |
| <b>YE484PCNTP</b>   | 4        | 5.47524581        | 1.50         | C-1452     | •       | 9.123007  |            |            |
| CEASITY             | 1        | C.2C(2141)        | (.le         | (.6926     | 1       | _C.2C0214 |            |            |
| 7E184CEASTTY        | 1        | C+C1(C4235        | C-C1         | (.5253     | 1       | C.CCE227  |            |            |
| >C+T++EEAS1TY       | 4        | C.4C2E111E        | 6.68         | C.9873     | •       | 0.402017  |            |            |
| YEARAPCHTH OCENSITY | 4        | 2.61756160        | (.17         | C.5592     | 4 .     | 3.8)7561  | £C C.11    | (.::42     |
| SCLACE              | £#       | TYPE 111 55       | F VALLE      | FR F       | CF      | TYPE IV   | SS F VØLLE | РК F       |
| YEAR                | 1        | 1.7626777         | 1.03         | (.3219     | 1       | 1.203627  |            |            |
| PCPTH               | i i      | 6.65271472        | 1.75         | (-1712     | 4       | 8.652714  |            |            |
| YEARADCHTH          | 4        | 5.16164666        | 1.64         | C.1554     | 4       | 9.181640  |            |            |
| CERSITY             | 1        | C.15CE2E14        | C.15         | C-6995     | 1       | 0.190616  |            |            |
| YEAROCENSITY        | i        | C. (11267ef       | (.(1         | (.5251     | l       | C.C11287  |            |            |
| PCATP OCEASITY      |          | C.25214764        | (.(.         | C.5879     | 4       | C.293147  |            |            |
| YEAF PEAT PEERS ITY |          | 3.61756160        | C.77         | C.5592     | •       | 3.017561  | 60 (.17    | (.::55     |

## CCCATICN-BELLE ISLE

|                     |               | CENERA                    | L LINEAR PODELS FACE                    | ECLPE   |                        |           |            |
|---------------------|---------------|---------------------------|---|---|------------------------|-----------|------------|
| CEFENCENT VAPISELE  | SCP TCTN      | SCRTITOTAL SPECIES        | • |   |                        |           |            |
| SCLACE              | CF.           | SLM OF SOLARES            | PEAN SCLARE                             | F VALUE                                       | FR F                   | R-SGLARE  |            |
| ME                  | . 15          | 2.25665765                | C-12413588                              | 0.99  | 0.5059                 | C.465C21  | 21.6256    |
| ERFCR               | 2C            | 2.40416515                | C-1252C526                              |   | ACET PSE               | SCR       | TOTH PEAN  |
| CEPPECTEE TETAL     | 25            | 4.66564863                |   | -   | 0.35384920             |           | 1.62/24302 |
| SCLECE              | <sub>EF</sub> | TYPE I SS                 | F VALLE FR F                            | . LF  | TYPE II'S              | S F VALLE | PR F       |
| 1646                | !             | C+C54E3747                | _ 0.44 _ 0.5157                         | j.  | 0.0e90e2e<br>0.7980117 |           |            |
| PEARACATE           | •             | C.79756565°<br>1.62587666 | 1.55 C.2149<br>2.66 C.1249              | - 1   | 1.0417621              |           |            |
| C#+5177             | - 1           | C.C7!?!C!4                | C.EC C.4470                             | ī   | 0.0752565              |           |            |
| TEAPOCERS ITY       | i             | C.C4572755                | C.4C C.5357                             | · i -   | 0.0450768              |           |            |
| PEPTHOCENSITY       |               | C.176747C5                | C.36 C.8362                             | Ĭ.  | C.1787470              |           |            |
| YEAROPERTY OF EASTY | 4             | C. inginege               | C. 14 C. 6452                           |   | C.1721762              | e Ç.24    | C.6452     |
| SCLACE              | C#            | TYPE 111 55               | F VALLE _ PR F                          | CF_   | TYPE IV S              | S F WALLE | PR _F      |
| YEAR                | ı             | C.C4485848                | C.26 C.256C                             | ı   | 0.0448544              |           |            |
| PCATP               | 4             | C.78485748                | 1.57 (.2216                             | 4 _   | 0.7848974              |           |            |
| 7E3R4PCKT+          | • • •         | 1.02057614                | "2.C4 C.1275                            | 4   | 1.0205761              |           |            |
| CEASITY             | t             | C.Cee2!!2?                | C.53 C.4754                             | , i   | C.C663553              |           |            |
| YEAR+CERSITY        | 1             | C.C5412671                | C.43 C.5184                             | <u>, , , , , , , , , , , , , , , , , , , </u> | 0.0541207              |           |            |
| PEATH OCERS IVY     | 4             | C.16452C27                | (.33 C.8550                             | 4   | 0.16452(3              |           |            |
| YESF+PCATH +CENSITY | 4             | C.17217626                | C.24 C.8452                             | 4   | C.1721762              | é (.34    | (.6452     |

# LCCATICA-BELLE ISLE

|                    |         | GENER                    | AL JUNEAR P |         |         |                          |                 |
|--------------------|---------|--------------------------|-------------|---------|---------|--------------------------|-----------------|
| CEFERCERT VARIABLE | SCR FER | SCRTIPERCH HUPBERS       | + .5)       |         |         |                          |                 |
| SCLECE             | CF      | SUP OF SCLARES           | PEAN        | SCLARE  | F VALUE | FF F R-                  | SCUARE C.V.     |
| ean.               |         | 35.76270054              |             | 362637  | 2.89    | 0.01150                  | 192726 41.655£. |
| EASCA              | ac      | 14.51125027              | C. 72       | 356252  |         | ACCT PSE                 | SGR PER FEAN    |
| CCORECTER TOTAL    | 35      | 54.25255121              |             |         |         | 0.85175958               | 1.11516566      |
| SCLACE "           | · CF    | 14PE   55                | F VALLE     | FR F    | CF"     | TYPE 11 SS               | F VALUE PR F    |
| YEAR               | . 1     | 1.02645742               | E.(5        | C.C1C2  |         | 5.67507107               | , na can        |
| PCATH              | 4       | 13.00415222              | 4.65        | (. ( 78 | 4       | 13.83805729              | 4.77 (.((73     |
| YEAROPCATH         | 4       | 12.77?63341              | 4.75        | C. CC74 | 4       | 13.61357071              | 4.69 C.CC18     |
| CENSITY            | 1       | 0.06600330               | _ (-12      | C.7313  | 1       | C.088CC23C               | C-12. C-1313    |
| YEAR+CERSITY       | 1       | 1.24321745               | 1.71        | C.2C54  | 1       | 1.15111720               |                 |
| PEAR OPENSITY      | , :     | C.2C5172C5<br>4.52547ECC | 1,10        | C. 57EE |         | 0.309722C9<br>4.92547eCC |                 |
| SCLECE             | C F     | TYPE 111 55              | F VALLE     | FR F    | CF      | TYPE IV SS               | F VALLE PR F    |
| YEAR               | 1       | 5.03527515               | 1.11        | C. C114 | 1       | 5.63927515               | 7.77 (.(114     |
| +CATH              | 4       | 13.46343565              | 4.64        | C.CCEZ  | 4       | 12.46242509              | 4.64 C.CCE2     |
| YESBOPCATE         | 4       | 12.46255152              | 4.65        | C.CCE1  | 4       | 12.48355152              | 4.65 (.006)     |
| CEPSITY            | 1       | C.CE3e551                | (.12        | C.7377  | 1       | C.C8365551               | C.12 C.1371     |
| YEAF OCEASITY      | 1       | 1.18982419               | 1.63        | C. 2157 | 1       | 1.10562415               | 1.67 (.2157     |
| PCP140CER\$174     |         | C+2CEC4222               | (.11        | (.5750  | 4       | C.3C8G4323               | C.11 C.575C     |
| 16384P(ATH+CEASITY | 4       | 4.52547400               | 1.70        | C.15C2  | 4       | 4.92547600               | 1.70 (.1902     |

|  |     |  | LCCATICH=B           | ELLE ISLE                  |               |                                     |             |                            |
|--|-----|--|----------------------|----------------------------|---------------|-------------------------------------|-------------|----------------------------|
|  |     | GENERA                                 | L LINEAR P           | CDELS FRCC                 | ECLAE         |                                     |             |                            |
| CELENCENT ANDIVERE 200                   | F E | SCRTIROCK BASS ALPE                    | ER! + .5)            |                            |               |                                     |             |                            |
| SCLPCE                                   | C F | SLM OF SQLARES                         | PEAR                 | SCLARÉ                     | F VALŪE       | FR F                                | R-SCLARE    | C.V.                       |
| ecce                                     | 15  | 14.28181227                            | C. 75                | 177560                     | 1+56          | 0.1642                              | C+557775    | 23.7146                    |
| ERACA                                    | āc  | 5.61055027                             | (.48                 | C54951                     |               | ACCT PSE                            | \$0         | R RB FEAN                  |
| CCPPECTEE TETAL"                         | 125 | 23.85480264                            |                      |                            |               | 69321679                            |             |                            |
| SCLECE                                   | CF  | TYPE 1 SS                              | FIVALLE              | FP F                       | <sub>CF</sub> | TYFE 11 S                           | S T F VALLE | PR F                       |
| PEAR<br>PCATE                            | !   | 2.2172C435 -<br>2.CEC2C663 -           | 1.67                 | C.C161<br>C.3989           | <del>1</del>  | 1.306e277<br>2.0286251              | 3 1.06      | C.(142<br>C.4C41           |
| VESBAPCATH<br>CERSITY<br>VESBACEASITY    |     | 2.06504722<br>C.06827275<br>C.25072725 | 1.61<br>(.16<br>(.61 | C.2114<br>C.6727<br>C.3762 |               | 1.4510344<br>C.CE83237<br>C.4362359 | \$ 6.16     | C.1652<br>C.6727<br>C.3521 |
| PEARAPCATE OF STATE .                    | :   | 1,611((35)<br>2,5 <u>1</u> 654617      | C-54<br>1-84         | C.46G1<br>C.1607           | •             | 1.811CC35<br>2.5269481              |             | C.46C1<br>C.16C7           |
| SCLACE                                   | CF  | TYPE_111_55                            | F VALLE              | FR F                       | CF            | TYPE_IV S                           | S F VALLE   | PR F                       |
| YEAD<br>PCATH                            | 1   | 2.2175774C<br>1.54258467               | 6.7C                 | C.C176                     | 1             | 2.2175774                           |             | C.C176                     |
| YEARAPEATA<br>CEASITY                    | •   | 2.82744427<br>C.C827266C               | 1.47                 | C.2483                     |               | 2.8274442<br>0.0827286              | 1 1.41      | (.2462<br>(.6626           |
| 7835114<br>78354CERSJTY<br>PCRTF4CERSJTY | 1   | C.2764C412<br>1.75C12673               | C.75<br>C.68         | C.3854<br>C.451C           | 1             | 0.3784041<br>1.7CC13E1              | 2 (.15      | C.2854<br>C.451C           |
| YEARAPERTPACERS ITY                      | 4   | 2.72654617                             | 1.64                 | C.16C7                     | 4             | 3.52654E1                           | 7 1.64      | C.16C7                     |

#### LOCATION=FT HENNEFIN

|                      |         | GENERA              | L_LINEAR P | CDELS.FRCC | ECLFE          |            |               |            |
|----------------------|---------|---------------------|------------|------------|----------------|------------|---------------|------------|
| CEFENCENT VARIABLE S | CR TCTC | SCRTITOTAL NUMBER C | F FISH     | 51         |                |            |               |            |
| SCLECE               | EF      | SLP OF SCLARES      | PEAR       | SCLARE     | F VALUE        | FF F       | R-SCUARE      | - c.v.     |
| +CCEL                | 1€      |                     | 2.11       | 512155     | 1.26_ <u>·</u> | 0.3013     | _c.:15664     | 26.2652    |
| ERRCR                | 21      | 25.15565678         | 1.67427889 |            | FCCT ≠SE       |            | SER TOTE HEAN |            |
| CCFAECTEC TCTAL      | 25      | 12.22201165         |            |            |                | 1.29393929 |               | .25541352  |
| SCLECE               | ·       | TYPE 1 55           | F VALLE    | FR F       | c F            | TYPE II S  | S F VALLE     | PR F       |
| 1644                 |         | 2.14064547          | 1.25       | C.2667     |                | 4.7242152  | 1             | \$1676 _   |
| PCMP                 |         | 11.72057645         | 1.75       | C-1768     | 4 -            | 11.7909432 |               |            |
| YEAROPCATH           | 4       | e.773Ce7e5          | 1.21       | (.2986     | 4              | e.0712351  |               | C.236C     |
| CERSITY              |         |                     |            |            | <u>1</u>       | 0.0037422  |               |            |
| YEAR CENSITY         | ,       | C.CEC45E24          |            | C. 6266    | 1              | 1.0960644  |               | C.4275     |
| PEATH OCENSITY       | 4       | E-155ECE71          | 1.22       | C.33C5     | 4              | E.199EC67  |               | C.22C5     |
| YEARTPEATH TERSTTY   |         | 1.13224CCC          | 1.43 -     | _ C+\$649_ |                |            | 61,62         | _ C: E 4 5 |
| screce               | E.F     | TYPE 111 55 .       | F VALLE    | FR_ F      | ,CF            | TYFE IV S  | S _ F VALLE   | PR F       |
| 1645                 | 1       | 4.16682727          | 2.45       | C.1256     | 1+             | 2.3247240  |               | C.1724     |
| PCATE                | 4       | 17.4222212          | 2.00       | C.13C8     | 4+             | 12.0292263 | E L.EC .      |            |
| YEAP PENTH           | ,       | 6.571C4462          | 1.24       | (.2883     | 4.             | 5.6784268  |               | C.2542     |
| CEPSITY              | 1       | C.21CE1C55          | (.15       | C. # 71G   | 1.*            | C.0152523  |               | (, 424 F   |
| YEAP4CERS STY        | 1       | 1.26564362          | C. 17      | (.3565     | 1.             | 1.2850438  |               | (.:505     |
| PCATE OCEASITY       | 4       | £.01501055          | 1.20       | (.3368     | 4.             | 9.5711751  |               | C+1413     |
| YEARAPCATH OCEASITY  | 7       | 7.12224666          | 1.42       | (.2649     | 3              | 7.1232400  | t 1.42        | 6.2645     |

## LCCATICN-PT HERMEFIA

|                       | ···      | GFNE                     | AL LINEAR P  | CDELS FACE      | ECLES        |                          |              |           |
|-----------------------|----------|--------------------------|--------------|-----------------|--------------|--------------------------|--------------|-----------|
| CLIFENCENT VARIABLE S | SCP TCTA | SCRTITO'AL SPECIES       | .5)          |                 |              |                          |              |           |
| SCLACE                | ` c F    | SLP OF SQLARES           | PEAN         | SCLAPE          | T VALUE      | FF F R                   | -SCUARE      | C.V.      |
| PECEL                 | 18       |                          | C-34         | 58C146          | 1.25         | 0.3099                   | -517C7C      | 22.2554   |
| ERFCR                 | 21       | 2.45114274               | (.11         | e12113          |              | RCCT PSE                 | SGR 1        | TOTH PEAN |
| TOPETHE STORES        | 25       | 5.67556555               |              |                 | <del>-</del> | 0.34164474               |              | .57725444 |
| SCORE                 |          | TYPE I SS                | FVALLE       | - <sub>68</sub> | cF           | TYPE 11 SS               | FVALLE       | PA F      |
| YEAR                  | 1_       | C.1egCSEe1               | 1.41         | C.2476          | 1            | 0.34752421               | 2.58         |           |
| FCFTF                 | 4        | C. e162(E34              | 1.22         | C.2951          | 4            | C.450e 15C7              | 1.25         | C.27C4    |
| YEARAPCATH            | 4        | C-2C556C46               | C. 66        | C-6246          | •            | 0.30151606               | Cies         | C.636C    |
| CENSITY               | }        | C.C1415472               |              | C.7311          |              | 0.01415472               | C.12         | (.1311.   |
| AETD CEPZ IAA         | ,        | C.C2265264               |              | C. 664 C        | 1            | 0.10250527               | C.EE         | C.2564    |
| YEAROPCATE CENSITY    | i        | C.6517665C<br>C.82666153 | 1.41<br>2.40 | C.2655          | <u>i</u> _   | C.6577885C<br>C.87866152 | 1,41<br>2,40 | 2.6.63    |
| SCLACE                | tF       | TYPE III SS              | F NALLE _    | FR F            | SF.          | TYPE IV SS               | F VALLE      | PR F      |
| YEAR                  | ł        | C.31656215               | 2.71         | C-1145          | 1+           | 0.26067004               | 2.23         | C.1455    |
| PCPTF                 | 4        | C.eftt1e55               | 1.47         | C.2466          | 4.9          | 0.45643503               | 1,41         | C.2645    |
| YESPAPCATE            |          | C.157C7e52               | c.42 -       | ~ C.7909 ~      | 4.0          | C.37816444               | C. £1        | (         |
| CEASITY               | 1        | C.CCC125E1               | (.((         | C.\$727         | 1.0          | C.C11124E2               | C.1C         | C.76C6    |
| VERRICEASITY          |          | 0.12530517               | 1.67_        | C.3119          | 1.4          | 0.12520517               | 1.01         | C.2119    |
| PCATP CEASITY         | 4        | C.e1124855               | 1.31         | (.2989          | 4.4          | 0.89365553               | 1.51         | C.1455    |
| YEAROPCATHOCERSITY    | 2        | C.83666153               | 2.40         | C.C97C          | 3.           | C.83886192               | i.40         | (.(510    |

## LCCATICK-PT HEAREFIA

|                      |        | GENER              | AL LĮMĒAR PI | -          | EÇUPE  |            |             |            |
|----------------------|--------|--------------------|--------------|------------|--------|------------|-------------|------------|
| CEFENCENT VARIABLE S | CA PEP | SORT(PERC) NUMBERS | + .51        |            |        |            |             |            |
| SCLECE               |        | SUP OF SQUARES     | PEAN         | ECLARE     | FYALUE | **         | A-SCUARE    | c.v.       |
| +ccer                |        | 24,58743643        | 3.54         | 374633     | 147    |            | 0.557830    |            |
| ERFCP                | 21     | 27.00075051        | 1.32         | 364528     |        | FEET PSE   | SQI         | R PER HEAN |
| CESSECTEC TOTAL      | 25     | 62.76616133        |              |            |        | 1.15050476 |             | .63174656  |
| SCLPCE               |        | TYPE 1 55          | FVALLE       |            |        | TYPE II    | SS F VALLE  |            |
| 18/4                 |        | C.SCSETCET         | (.46 .       |            |        |            |             |            |
| PEATR                | 4      | 11.72275752        | 2.22         | C-1C51     | 4      | 12.52573   |             |            |
| TEAPPEATH            | 4      | 14.89256643        | 7.61         | C.C516     | •      | 12.640444  |             | C.CE27     |
| CEASITY              | !      | C.CeCliate         |              | _C. £333 . |        | 0.C60117   |             | C.2433     |
| YEARACENSTTY         |        | 1.33(5)333         | 1.0          | [.3274     |        | 1.25619    |             |            |
| PERPOCATE OCEASITY   | i_     | 1.75615368         | 1.21         | C.9139     | i      |            |             |            |
| SCLACE               | C F    | TYPE III SS        | F VALLE      | FR F       | CF     | TYPE IV    | SS_ F VALLE | PR F_      |
| YEAR                 | :      | 1.57247444         | 1.16         | C.2942     | 1.     | 1.26225    |             |            |
| PCATH                |        | 13.57156485        | 2.56         | C. C&84    | 4 4    | 12_15167   |             |            |
| TEJEOPCATE           |        | 13.21206625        | 2.50         | C.C739     | 4.0    | 12.89056   |             |            |
| V112433              | 1      | C.CC7515E2         | (.(1         | C. 94C6    | 1.0    | 0.02644    |             |            |
| YEAR+CERSITY         | 1      | 2.06335458         | 1.56         | C.2256     | 1.     | 2.Ce235    |             |            |
| PCATP OF EASITY      | 4      | 1.79182405         | (.23         | C.5165     | 44     | 1.92718    |             |            |
| 1E ##*PCAT+ *CEASITY | 3      | 4.60666526         | 1.21         | C.33C5     | 3      | 4.80600    | 526 1.21    | C.::C5     |

#### LCCATICA-PT HEAREFIA

|                        |        | GENER              | AL LINEAR PO | CELS FRC       | ECLFE   |                    |               |               |
|------------------------|--------|--------------------|--------------|----------------|---------|--------------------|---------------|---------------|
| CEFENCENT VARIFELE     | SC# #E | SCRTIROCK BASS NEP | BERS + .51   |                |         |                    |               |               |
| SCUPCE                 |        | SUM OF SCLARES     | PEAR         | SCLARE         | F VALUE |                    | SCUARE        | C.V.          |
| PCCEL                  | 16     | 2.55326366         | C-51         | 1 <u>57716</u> | 0.64    | 0.8778             |               | . 48-4691.    |
| EPPCR                  | 21     | 7.15230654         | C.34253850   |                |         | ACCT PSE           | SQF           | R RB MEAN     |
| CERPECTEE TETAL        |        | 11.14965625        |              | :              |         | 0.50526769         | 1.            | . (5654173    |
| SCCPCE -               |        | TYPE 1 SS          | FVALLE       |                |         | TYPE 11 SS         | FVALLE        | PR F          |
| 16/                    | 1      | C-162C4221         | 6.9          | C.4725         |         | 6.40702756         |               |               |
| PCATH                  |        | C. 55685824        | 6.41         | C.8C19         | 4       | 3.74867022         | C . 55        | C.1026        |
| YEAFAPCATH             | 4      | C.22475E33         | ¢.le         | C. 5542        | •       | 0.79983717         | C.58          | C.e716        |
| CEASITY                | 1      | C.2551C436         |              | C.3977         | !       | 0.25536438         |               |               |
| TEAR CEASITY           | 1      | C.199263C2         | (.46         | C.5C28         | 1       | 0.60858:36         | C.C2          | C-6125        |
| PCATH *CEASITY         | •      | 2.23645766         | 1.70         | C.1874         | •       | 2.33049700         | 1.70          | C.1874        |
| VENEABCRIF OCERSITY    |        | C+2426224E_        | <u></u>      |                |         | <u> </u>           | <u></u> Lef 4 | _ <b></b>     |
| SCLICE                 |        |                    | F_VALUE_     | FR F           | <u></u> | TYPE IV SS         | F_YALLE_      | PBE           |
| YEAR                   | i      | C.##ee1122         | 1.42         | C.2163         | 1*      | 0.41683150         | 1.22          | C.2825        |
| PERTM                  | 4      | C.72311752         | C.24         | _ C. 915C_     | 4.      | C.5794172C         |               | <u> </u>      |
| YEAFAPCATE             |        | C.EC44E49C         |              | (.6755         | 4.      | C.514e141C         | C.36          | C.E224        |
| CEASITY                | 1      | C.C55C5174         | (.26         | C. £ C3 @      | 1.      | C.26717663         | C.78          | C.2866        |
| YESP CEASITY           | . 1    | C.CCCICIEE         | C. C2        | C.8951         |         | 0.00610100         | C.C2.         | ( . 6 6 6 5 ) |
| PERFECENSITY "         | 4 "    | 2.71466576         | 1.65         | C.1847         | 4.      | 1.44126165         | 1.65          | C.4C46        |
| YE I BOD CATHOCEAS ITY | 1      | 6.24262246         | (.24         | C.ETC2         | 3       | C.242E234 <b>e</b> | (.24          | 6.8762        |

## LCCATICA-STCAT

|                     |          |                   | AL LINEAR P  | COELS FACC       | ECLFE   |                        |           |             |
|---------------------|----------|-------------------|--------------|------------------|---------|------------------------|-----------|-------------|
| CEFENCENT VARIABLE  | SCP TCTC | SCRICTOTAL NUMBER | CF F15H + +  | 51               |         |                        |           |             |
| SCLECE              | CF       | SUP OF SCLARES    | PEAR         | SCLAPE           | f vacue | FF F '                 | R-SCUARE  | C.V.        |
| •CCEL .             | 16       | 16.56451562       | C.58         | 651776           | 0.26    | 0.9975                 | C.175515  | 12.0221     |
| EFFCF               | 21       | 48.26979229       | 2.25         | 532159           |         | RCCT PSE               | SCR       | TOTE PEAK   |
| CCFRECTEC TCTAL     | 35       | 56.85(2725)       |              |                  |         | 1.51635141             |           | . #55#5020  |
| SCLACE              | £ F      | TYPE 1 SS         | F VALLE      | FR F             | `` cr   | TYPE"   S              | S F VALLE | PR F        |
| YEAR                | 1        | C.C7374827        | 0.03         | (.0566           | ૃ1      | C.1410974              |           |             |
| PEPTH               | 4        | 2.27652462        | (.25         | (.5015           | 4       | 2.1409505              |           | (.5168      |
| YESRAPCATH          | 4        | 2.54665427        | C*35         | (.8611           | •       | 3.2897230              |           | 0.8316      |
| CERSITY             | 1        | C.27e4321E        | C+12         | C.7322           |         | 0.2764321              |           | (.3322      |
| YEARACENSTRY        |          | C-24711162        | (+12         | (.7366           | 1       | C.G314892<br>1.11936CC |           | 6.5721      |
| PEARAPCATH TEASITY  | 3        | 1.11526001        | C.12<br>C.52 | (.5731<br>(.6715 | 3       | 2.6042243              |           | Cieris      |
| SCLPCE              | CF       | 14PE              | F VALLE      | to F             | C#      | TYFE IV S              | S F VALLE | PR F        |
| 7648                | 1        | C+13E224EC        | (            | (.ecee           | 1.      | C.CE41342              |           | C. £45 E    |
| PCPTP               | 4        | 2.24364612        | C.24         | C.51C1           | 44      | 2.5154062              |           | C.8517      |
| TERFORCATE          | 4        | 2.26572364        | (.26         | (.6358           | 4.0     | 2.6496769              |           | C. 6924     |
| VTIZABI             | 1        | C.16C25651        | (.(7         | (.7943           | 1.4     | C.2764323              |           | (.1742      |
| <b>VEARACENSITY</b> | 1        | C.C3146427        | COL          | 0.5080           | 14      | 0.0314852              |           | (,4(8)      |
| PCPIF +CERSITY      | - 4      | 1.11526661        | (.12         | C.5731           | 4 1     | C.1930885              |           | ( . 5 5 5 3 |
| TEAPOPERTH OCENSITY | 3        | 2.65422423        | (.12         | (.6715           | 3       | 3.6042243              | ? (.52    | (.6115      |

| L | c | £, | ٨ | Į | 1 | ε | ٨ | ٤ | 1 | C | ٨ | 7 |
|---|---|----|---|---|---|---|---|---|---|---|---|---|

|                                |               | CENER                    | L LINEAR P   | COELS PACC       | ECLPE   |            |              |            |
|--------------------------------|---------------|--------------------------|--------------|------------------|---------|------------|--------------|------------|
| CEFERCENT VARISELE             | SCR TCTN      | SCRTITOTAL SPECIES       | : :          |                  |         |            |              |            |
| SCLACE                         | "Lf           | SUM OF SQUARES           | PEAR         | SCLAPE           | F VALUE | FR F R-    | SCLARE       | Č.Ÿ.       |
| FCCEL                          | le .          | 2+10054460               | C-15         | ((3(27           | 1.10    | C.4124C.   | 485261       | _15+\$724  |
| EFFCB                          | 13            | 2.8645856E               | C-13         | 646563           |         | PCCT PSE   | 5CR          | TOTH MEAN  |
| CCFFECTER TETAL                |               | 5.56512446               |              |                  | 0.      | 26932592   | 1            | . 66563580 |
| SCLACE                         | <sub>CF</sub> | TYPE 1 55                | F VALLE      | FR F             | CF      | TYFE 11 55 | F VALUE      | PR F       |
| YEAR                           |               |                          |              | , G(313          | 1       | 0.62859024 | 4.61         | C.C427.    |
| PCPIF                          | 4             | 1.04321585               | 1.51         | C-1459           | •       | 1.00151728 | 1.84<br>C.52 | C.1557     |
| YEARAPCATH                     | •             | C.2C5C7152               | (.26         | C. 8181          | •       | 0.28426235 | 6,12         | (.72(0)    |
| CENSITY                        | 1             | 6.01600504               | (.13         | (. 72( C         | 1       | 0.0186656  | 6.62         | (.676)     |
| \E\$F#CEASITY<br>>CATH#CEASITY |               | C.CCC55654<br>C.41365142 | (.(l<br>(.76 | C.5325<br>C.564G | · · ·   | 0.41269142 | č.7e         | C.te40     |
| VE FRANCATE CERSITY            | i             | 6.2652633                |              | (.5585           |         | C.28936212 | (.11         | . 6.1511   |
| SCURCE                         | CF            | TYPF ILT SS              | F VALLE      | FR F             | CF      | TYPE IV SS | F VALLE      | PR F       |
| 1618                           | 1             | C. 55172272              | 4.23         | C.C498           | 1+      | 0.67904421 | 4,56         | C.C367     |
| PCFTH                          | 4             | 6.85566665               | 1.45         | 6.1557           | 4.4     | 1.27172182 | i.::         | C+CE52     |
| 16484PCA1+                     |               | C.2647C325               | (.52         | (-7214           | 4.4     | C.15142E85 | 6.26         | (.6852     |
| CEASITY                        | 1             | C.C?C2117C               | (.22         | C-6422           | 3.4     | 0.01800506 | ¢.13         | (.72((     |
| TEAROCENS ITY                  | 1             | C.CC:25624               | (,(2         | C-2761           | 1.      | 0.00339624 | 6.65         | C. E761    |
| +C+1++CE+\$1TY                 | 4             | C.41264142               | (.7£         | C-5640           | 4.4     | C.32745674 | 59.3         | Ciessa     |
| 16464PChT++CERS1TY             | 3             | C-26536312               | (.71         | C.5585           | 3       | C.28934212 | t.71         | C. ! ! E ! |

## LCCATICA-STCAT

|                         |         | GENER                    | AL LINEAR PO         | CELS FACC                  | ECLAE   |                          | <del>_</del> ·  |            |
|-------------------------|---------|--------------------------|----------------------|----------------------------|---------|--------------------------|-----------------|------------|
| CEFENCENT VARIJELE      | SC# PE# | SCRTIPERCH NUPBERS       |                      |                            |         | ***                      |                 |            |
| SCLFCE                  | CF      | SLM OF SQLARES           | PEAR :               | CLAPE                      | F VALUE |                          | e-scuare        | C.V.       |
| +CCEL                   | 16      | 4.76416172               | C-26                 | 578787                     | 1.60    | 0.4941 .                 | g.gessec        | 45.6537    |
| ERFCR                   | 21      | 5.57287875               | (.26                 | 54228C                     |         | ACCT PSE                 |                 | R PER PEAN |
| CCFFECTEC TCTAL         | 25      | 10.25604048              |                      | ٠                          |         | 0.51519700               |                 | 1.(3245624 |
| SCLACE                  | C.F     | 14 <b>PE 1</b> 55        | F VALLE              | FR F                       | CF      | TYFE     \$5             | f VALLE         | PR F       |
| YEAR                    | 1       | 1.17575656               | 4.44                 | C. C472                    |         | 0.49124630               | g . 71          | C. 5571    |
| ACATH<br>YEARANCHTH     | - 4     | C.71456731<br>C.58645165 | (.e)<br>(.15         | C.4180<br>C.4994<br>C.1905 | 1       | G.33185411<br>G.48574831 | ; (.2)<br>1.63  | (.1505     |
| CERSITY<br>YEAR-CERSITY | 1       | C.46576636<br>C.236757C1 | 1.63<br>1.27<br>(.58 | (.2727                     | i       | C.CEQ52?2:<br>1.0412521  | 5 (. <u>5</u> 8 | C.4352     |
| PERFORENSITY            | 1       | 1.C4125215<br>C.42558E24 |                      | (.4524                     | 3       | 0,4295682                | ā, C,##         | c.eta4     |
|                         | £\$     | TYPE     !!              | F WALLE              | PR F                       | CF      | TYFE IV \$               | Ş , E VALLE     | PR ,F      |
| SCLACE                  |         | C.\$1586\$4C             | 1.56                 | C.1763                     | 1+      | 0.5174402                |                 |            |
| PEAR<br>PEATH           |         | 1.73627521               | 1.16                 | C.357C                     | 44      | 0.7271548<br>C.3265740   | Ť Č C.3]        | C.6666     |
| TEASTLY                 | 1       | C.434441C3               | 2.31                 | C. 1385                    | 1.0     | 0.4057603<br>0.060523    |                 |            |

## LECATICA-STEAT

|   |       | GENER                                  | AL LINEAR PE           | CDELS FACC                 | ECLAE          |                               |              |            |
|---|-------|--|------------------------|----------------------------|----------------|-------------------------------|--------------|------------|
| CEFERCENT VARIABLE S                                | C# #E | SCRTEROCK BASS NEP                     | BER: + +5)             |                            |                |                               |              |            |
| SCLACE  | C F   | SLM OF SCLARES                         | PEAR                   | SCLARE                     | F VALUE        | FR F                          | R-SCUARE     | C.v.       |
| +CLEL   | 18    | 2.44642785                             | . t.15                 | 113544                     | 0.33           | C.9896                        | 0.556310     | 49.0534    |
| ERRER   | 21    | 12.17986341                            | t.\$758C358            |                            |                | ACCT AZE                      | S            | R RE PEAN  |
| "CEFFECTEL TETAL                                    | 25    | 15.6163212C                            | •                      |                            | <del>-</del> 0 | .76144861                     | •            | 1.55228464 |
| icirce.   | · c+  | 1 TOPE 1 55                            | F VALLE .              | ™FR F                      | cF             |                               | SS F VALLE   |            |
| 7646  |       | C.325123CE                             | - C-13                 | _ C.3459<br>C.5654         |                | 0.45041                       | C27 C.16     |            |
| \E489P(ATH<br>LEASITY                               | •     | 1.65627510                             | C.31<br>C.14           | C.5916<br>C.7161           |                | 1.63673<br>0.07880<br>C.21686 | 1367 . ( -14 | C.7161     |
| YEAROCEASITY<br>PCATHOCEASITY<br>YEAROPCATHOCEASITY | 1     | C.35336645<br>C.35336645<br>C.13655746 | (+\$7<br>(+17<br>(+(t) | C.4572<br>C.5515<br>C.57CB |                | 0.39338<br>C.13645            | 1649 6.17    | 0.4512     |
| SCLACE  | Ç.    | TYPE ILL SE                            | F VALLE                | FR F                       | CF             | TYPE IN                       | SS F VALLE   | PR F       |
| 7819  | 1     | C.2144454C                             | (. ES                  | C.3569                     | 4.             | C.4851<br>Q.5341              | esq C.22     | C.5182     |
| PCATP<br>78289PCATP<br>C8451TY                      |       | 1.62622667                             | C.11<br>C.14           | C.5571<br>C.7157           | 11             | 1.61516<br>C.0766<br>C.2166   | C287 C.14    | 6.7161     |
| >EAP+CERSITY PCATH+CERSITY >EAP+PCATH+CERSITY       | 1     | C.35226665<br>C.1767276665             | C-17<br>C-CE           | C.5474<br>C.5515<br>C.57C0 | , 10           | 0.1269                        | 5613         | C.5645     |

APPENDIX S

Physical Data for Hoop Net Sites

1

| APPENDIX<br>HOOPNET | APPENDIX<br>Hoopnet Station Physica | ī | DA TA    |            |                |   |      |               |                         |                             | LORAN                       |
|---------------------|-------------------------------------|---|----------|------------|----------------|---|------|---------------|-------------------------|-----------------------------|-----------------------------|
| DATE                | RIVER                               | , | LOCATION | STA.       | DEPTH<br>(FT.) | BOTTOM<br>TYPE                          | NET  | TEMP.<br>(C.) | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES)        | COORD.<br>(UPPER/<br>LOWER) |
| 5/23/83             | ST. CLAIR                           |   | STAG     | -          | 3.0            | SILT & CLAY                             | SET  |               | 1.2                     | 3500                        | 497412                      |
|                     |                                     |   |          | 8          | 5.0            | SAND                                    | SET  |               | 0.0                     | 4 699<br>8 50 00<br>8 00 00 | 30904 1<br>497403           |
|                     |                                     |   |          |            | •              |   | LIFT | <b>8</b> 0    | 6.0                     | 3600                        | 309035                      |
|                     |                                     |   |          | <b>7</b> 0 | ص<br>ص         | SAND                                    | SET  | <b>.</b>      | o                       | 4800                        | 497423                      |
|                     |                                     |   |          | 4          | 9.0            | SAND                                    | SET  | - o           | * «                     | 900                         | 309068<br>497428            |
|                     |                                     | • | 1        | 1          | 1              |   | LIFT | 80            | -                       | 4300                        | 309075                      |
|                     |                                     |   | FAWN     | -          | 3.0            | SAND                                    | SET  | 4.60          | D                       | 669                         | 498270                      |
|                     |                                     |   |          | ,          | •              | •                                       | LIFT | •             | 4.4                     | 8                           | 309581                      |
|                     |                                     |   |          | ~          | O.             | SAND                                    | SET  | 4.0           | <del>.</del>            | -89                         | 498272                      |
|                     |                                     |   |          | ო          | 0.4            | SAND                                    | SET  | Ø 6           | 9 <del>-</del>          | <del>- 6</del>              | 309592                      |
|                     |                                     |   |          |            |                | !                                       | LIFT | 0.            | . O                     | 280                         | 309620                      |
|                     |                                     |   |          | 4          | 9.<br>8        | SAND                                    | SET  | 8.7           | 1.2                     | 450                         | 498285                      |
|                     |                                     | 1 |          | 1          | 1              |   | LIFT | න<br>ජ        | 0.5                     | - 50                        | 309620                      |
|                     |                                     | ď | RUSSELL  | -          | 0.4            | SILT & CLAY                             | SET  | 4.            | 1.6                     | 350                         | 498666                      |
|                     |                                     |   |          | ,          | ,              | !!                                      | LIFT | <b>8</b> 0    | <del>-</del>            | 150                         | 308975                      |
|                     |                                     |   |          | 7          | <b>4</b><br>0  | SAND                                    | SET  | æ 6           | - (                     | 00 E                        | 498665                      |
|                     |                                     |   |          | e          | 3.0            | SAND                                    | 717  |               | - IE                    | - R                         | 309974<br>408666            |
|                     |                                     |   |          |            | •              | )                                       | LIFT |               | , <b>s</b>              | 230                         | 308958                      |
|                     |                                     |   |          | 4          | 0.4            | SILT & CLAY                             | SET  | •             | 4.                      | 230                         | 498666                      |
|                     |                                     |   |          |            |                |   | LIFT | Ø)            | 0.7                     | 250                         | 308822                      |
|                     | DETROIT                             |   | BELLE    | -          | 6.0            | RUBBLE                                  | SET  | 11.3          | 1.2                     | 430                         | 499954                      |
|                     |                                     |   |          | ,          | •              |   | LIFT | :<br>:        | ٠.                      | 1999                        | 312761                      |
|                     |                                     |   |          | 4          | )<br>,         | RUBBLE                                  | 167  |               | - c                     | 8.38                        | 488855                      |
| ٠                   |                                     |   |          | ၉          | 5.0            | SILT & CLAY                             | SET  | 12.5          | , r.                    | e 10                        | 499995                      |
|                     |                                     |   |          |            | ,              |   | LIFT | 10.8          | 0.0                     | 3000                        | 312841                      |
|                     |                                     |   |          | 4          | o.             | SILT & CLAY                             | SET  | 12.3          | 0.5                     | 630                         | 499994                      |
|                     |                                     | 1 |          | 1          | 1              | 1 | LIFT | 10.9          | 0.0                     | 3000                        | 312840                      |
|                     |                                     | I | HENNEPIN | -          | 0.9            | SAND                                    | SET  | 11.4          |                         | 4500                        | 500701                      |
|                     |                                     |   |          |            | (              |   | LIFT | 9.            | O                       | 000                         | 314073                      |
|                     |                                     |   |          | 7          | o.             | SANO                                    | SET  |               | 9 9                     | 900                         | 500701                      |
|                     |                                     |   |          | က          | <b>9</b>       | SILT & CLAY                             | SET  | . =           | 0<br>0<br>4             | 000                         | 500710                      |
|                     |                                     |   |          |            |                |   | LIFT | 1.5           | 4.0                     | 3500                        | 314081                      |
|                     |                                     |   |          | 4          | o.<br><b>9</b> | SILT & CLAY                             | SET  | E :           | e                       | 1500                        | 5007 10                     |
|                     |                                     |   |          |            |                |   | LIFT | 11.5          | 4.0                     | 3200                        | 314081                      |

| 500991      | 314230 | 500987        | 314227  | 501003    | 314253 | 501004    | 314252      |
|-------------|--------|---------------|---------|-----------|--------|-----------|-------------|
| 1000        | 3900   | 900           | 3500    | <u>\$</u> | 4500   | <u>\$</u> | 4500        |
| 0.0         | s .    | e.<br>0       | o.<br>8 | 9.        | 9.1    | 5         | <b>-</b> .6 |
| E :         | · · ·  | B             | 11.7    | 12.0      | 12.0   | 12.0      | 12.0        |
| SET         | - 11-  | SET           | LIFT    | SET       | LIFT   | SET       | LIFT        |
| SILT & CLAY |        |               |         | RUBBLE    |        | RUBBLE    |             |
| 0.4         | •      | <b>4</b><br>5 |         | 5<br>0.0  |        | 9.0<br>0  |             |
| -           | (      |               |         | ო         |        | 4         |             |
| STONY       |        |               |         |           |        |           |             |
| DETROIT     |        |               |         |           |        |           |             |
| 5/23/83     |        |               |         |           |        |           |             |

| DATE    | RIVER     | LOCATION | STA.<br>NO.  | 0EPTH<br>(FT.) | BOTTOM      | NET    | TEMP.       | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES) | COORD.<br>(UPPER/<br>LOWER) |
|---------|-----------|----------|--------------|----------------|-------------|--------|-------------|-------------------------|----------------------|-----------------------------|
| 6/20/83 | ST. CLAIR | STAG     | -            | £. 5           | SAND        | SET    | 14.7        | 2.1                     | 4000                 | 497398                      |
|         |           |          | •            | •              |             | LIFT   | 5.0         | 2.4                     | 1999                 | 308033                      |
|         |           |          | 7            | 9.<br>O        | SAND        | SET    | 14.9        | 2.0                     | 3886                 | 497401                      |
|         |           |          | •            | •              | 4           | LIFT   | 15.0        | 5.0                     | 888                  | 308034                      |
|         |           |          | <del>.</del> | <b>4</b><br>5  | SAND        | SET    | 13.0        | 0                       | 4500                 | 497414                      |
|         |           |          | •            |                |             | LIFT   | 15.0        | ٠                       | 2500                 | 309048                      |
|         |           |          | 4            | 4.<br>U        | SANC        | LIFT   | 15.0<br>0.0 |                         | 2 199                | 308048                      |
|         |           |          |              |                |             |        |             |                         |                      |                             |
|         |           | NAM      | -            | 9.<br>9.       | SAND        | SET    | . i         | - 0                     | 3888                 | 498269                      |
|         |           |          | •            | •              | CAND        | 1111   | 0.0         | э с<br>Э -              | 000                  | 208583                      |
|         |           |          | ٧            | )<br>,         | SAMO        | 111    |             | <br>                    |                      | 300586                      |
|         |           |          | m            | 0.4            | SAND        | . T 35 | 9.6         |                         |                      | 40000                       |
|         |           |          | )            | •              |             | LIFT   | 15.3        | -                       | 3800                 | 309623                      |
|         |           |          | 4            | 4.5            | SAND        | SET    | 15.5        | 1.2                     | 3500                 | 498286                      |
|         |           |          |              |                |             | LIFT   | 15.3        | 1.2                     | 4000                 | 308622                      |
|         |           | RUSSELL  |              | 0.8            | ONAS        | SET    | 18.5        | 1.2                     | 4500                 | 498668                      |
|         |           |          |              |                |             | LIFT   | 16.0        | 7.                      | 1999                 | 309951                      |
|         |           |          | 7            | 5.0            | SAND        | SET    | 15.3        | 1.2                     | 4300                 | 498666                      |
|         |           |          |              |                |             | LIFT   | 16.1        | 1.3                     | 1999                 | 309951                      |
|         |           |          | က            | <b>4</b> .0    | SAND        | SET    | 16.0        | 1.7                     | 4389                 | 498667                      |
|         |           |          | ,            | ,              | •           | LIFT   | 9:0         | <b>60</b> 1             | 1699                 | 308868                      |
|         |           |          | 4            | 4<br>C         | SAND        | SET    | 16.4        | <del>.</del> .          | 4300                 | 498667                      |
|         |           | 1        | 1            | 1              |             | LIFT   | 16.0        | . m                     | 1800                 | 308871                      |
|         | DETROIT   | SELLE    | -            | 3.0            | RUBBLE      | SET    | 21.0        | 0.1                     | 1500                 | 499981                      |
|         |           |          |              |                |             | LIFT   | 21.0        | 0.5                     | 450                  | 312804                      |
|         |           |          | 7            | 0<br>0         | RUBBLE      | SET    | 21.0        | <del>-</del> (          | 1399                 | 499982                      |
|         |           |          | ,            | 1              | •           | LIFT   | 21.0        | 9.0<br>0                | 920                  | 312804                      |
| ٠       |           |          | m            | o.             | SILT & CLAY | SET    | 22.0        | o •                     | 995                  |                             |
|         |           |          | 7            | •              | VAIN B CITY |        |             | - 6                     | 0000                 | 20000                       |
|         |           |          | ,            | <b>&gt;</b>    | 316 8 66.5  | LIFT   | 20.7        | ) <del>-</del> .        | 160                  | 312847                      |
|         |           | HENNEDIN | -            | 3.0            | SAND        | SET    | 20.0        | 0.3                     | 3999                 | 500689                      |
|         |           |          |              | l              | !           | LIFT   | 20.9        |                         | 1999                 | 314069                      |
|         |           |          | 7            | 3.0            | SILT & CLAY | SET    | 20.0        | 6.0                     | 3999                 | 500693                      |
|         |           |          |              |                |             | LIFT   | 20.8        | <b>9</b> .0             | 2500                 | 314069                      |
|         |           |          | ო            | 9.0            | SILT & CLAY | SET    | 20.5        | 0.5                     | 4500                 | 500713                      |
|         |           |          |              |                |             | LIFT   | 20.8        | e .                     | 900                  | 314086                      |
|         |           |          | 4            | 9.0            | SILT & CLAY | SET    | 20.5        | 0.5                     | 984                  | 900716                      |
|         |           |          |              |                |             |        | ر<br>د      | ٠<br>د                  |                      |                             |

| 500988  | 200880 | 314231         | 314241 | 500999  | 314247 |
|---------|--------|----------------|--------|---------|--------|
| 4600    | 960    | 4 199<br>4 199 | 1999   | 4199    | 1999   |
| r.0     | 0.0    | o              | 1.2    | 4.      | <br>   |
| 20.1    | 20:    | 21.0           | 21.0   | 21.0    | 21.0   |
| SET     | SET    | LIFT<br>SET    | LIFT   | SET     | LIFT   |
| RUBBLE  | RUBBLE | RUBBLE         |        | RUBBLE  |        |
| 9.0     | 0.4    | <b>9</b> .0    |        | 0.<br>9 |        |
| -       | 8      | ღ              |        | 4       |        |
| STONY   |        |                |        |         |        |
| DETROIT |        |                |        |         |        |
| 6/20/83 |        |                |        |         |        |

5-4

| 7/25/83 | RIVER     | LOCATION | STA. | DEPTH<br>(FT.) | BOTTOM         | NET   | TEMP.                 | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES)     | COORD.<br>(UPPER/<br>LOWER) |
|---------|-----------|----------|------|----------------|----------------|-------|-----------------------|-------------------------|--------------------------|-----------------------------|
|         | ST. CLAIR | STAG     | -    | <b>4</b> .3    | SAND           | SET   | 20.0                  | 1.7                     | 3500                     | 497394                      |
|         |           |          | 7    | 4.2            | SAND           | SET   | 20.0                  | 2 · -                   | 3200                     | 309026<br>497390            |
|         |           |          |      |                |                | LIFT  | 19.8                  | 2.1                     | 2889                     | 308036                      |
|         |           |          | eo   | 0.4            | SAND           | SET   | 20.0                  | <b>.</b> .              | 3800                     | 497388                      |
|         |           |          | •    | •              | 9              | LIFT  | 9. 68<br>69. 68       | e .                     | 2800                     | 309028                      |
|         |           |          | •    | •              | ONAC           | LIFT  | 19.0<br>19.0          | . o.                    | 3600<br>2699             | 497399<br>309034            |
|         |           | FACT     | -    | 3.0            | RUSALE         | SET   | S 5                   | 9 0                     | 4000                     | 400000                      |
|         |           |          | •    | ?              |                | LIFT  | 20.0                  |                         | 0000                     | 309566                      |
|         |           |          | ~    | 3.1            | RUBBLE         | SET   | 20.5                  | 9.0                     | 3800                     | 498267                      |
|         |           |          |      |                |                | LIFT  | 20.0                  |                         | 3899                     | 309583                      |
|         |           |          | ო    |                | RUBBLE         | SET   | 20.5                  | <b>6</b> .0             | 3600                     | 498270                      |
|         |           |          | •    | •              | 74 17 9 7 17 2 | - 110 | 9 9                   | •                       | 900                      | 308282                      |
|         |           |          | ,    | 9              | 5              | LIFT  | 20.5                  | 9. F.                   | 3898<br>3898             | 309594                      |
|         |           | RUSSELL  | -    | 4.6            | SAND           | SET   | 20.5                  | 1.3                     | 2899                     | 498862                      |
|         |           |          |      |                |                | LIFT  | 20.5                  | <del>-</del>            | 3899                     | 310162                      |
|         |           |          | 7    | 4.7            | SAND           | SET   | 20.5                  | 4.4                     | 2899                     | 498665                      |
|         |           |          | (    | ,              |                | LIFT  | 20.5                  | O:                      | 3888                     | 310068                      |
|         |           |          | m    | - n            | SILT & CLAY    | SET   | 20.5                  | 10 ·                    | 2699                     | 49866                       |
|         |           |          | •    | 7              | >4 10 4 F 110  | 1171  | 5<br>5<br>9<br>9<br>9 |                         | 4000<br>0000<br>0000     | 309964                      |
|         |           |          | •    | †<br>D         | 6              | LIFT  | <b>5</b> 0.0          | <b>†</b> * .            | 400<br>000<br>000        | 309965                      |
|         | DETROIT   | BELLE    | -    | 4.0            | SILT & CLAY    | SET   | 20.5                  | 0.3                     | 2500                     | 498968                      |
|         |           |          |      |                |                | LIFT  | 20.0                  | 0.2                     | 4000                     | 312783                      |
|         |           |          | 7    | 4.0            | SILT & CLAY    | SET   |                       | 0.3                     | 2500                     | 499970                      |
| ٠       |           |          |      |                |                | LIFT  | 20.0                  |                         | 4000                     | 312784                      |
| ٠       |           |          | က    | <b>4</b> .0    | SILT & CLAY    | SET   | 20.5                  |                         | 3300                     | 499993                      |
|         |           |          | ,    | •              | •              |       | 0.6                   |                         | 000                      | 312839                      |
|         |           |          | r    | )<br>•         | סורו מ כנאו    | LIFT  | 21.0                  | 0<br>0<br>4 4           | 665<br>600<br>600<br>600 | 312842                      |
|         |           | HENNEPIN | -    | 6.0            | SILT & CLAY    | SET   | 23.5                  | 0.2                     | 2899                     | 500681                      |
|         |           |          |      |                |                | LIFT  |                       | 0.5                     | 320                      | 314067                      |
|         |           |          | 7    | <b>6</b> .0    | SILT & CLAY    | SET   | •                     | 0.5                     | 2800                     | 500678                      |
|         |           |          |      |                |                | LIFT  | 24.0                  | 0.5                     | 350                      | 414066                      |
|         |           |          | ო    | 5.2            | SILT & CLAY    | SET   | 23.5                  | e .                     | 3300                     | 500714                      |
|         |           |          | •    | t              | •              |       | 2 6<br>5 6            |                         | 060                      | 314080                      |
|         |           |          | ŧ    | ٠. ٩           | שורו פי נואו   | 75.   | 0.00                  | » •                     | 3600                     | 1000                        |

| 500984      | 314231      | 500997      | 314251           |
|-------------|-------------|-------------|------------------|
| 4600<br>550 | 4600<br>550 | 4399<br>600 | 4300<br>600      |
| 2.1         | 2.0<br>5.0  | - 7         | - <del>-</del> - |
| 24.0        | 24.0        | 24.0        | 24.0             |
| SET         | SET         | SET         | SET              |
| RUBBLE      | RUBBLE      | RUBBLE      | RUBBLE           |
| 3.6         | 6.0         | 5.4         | 4.4              |
| -           | ĸ           | ო           | 4                |
| STONY       |             |             |                  |
| DETROIT     |             |             |                  |
| 7/25/83     |             |             |                  |

| DATE    | DATE RIVER | LOCATI    | STA.     | DEPTH<br>(FT.)                          | BOTTOM<br>TYPE                          | NET           | TEMP.<br>(C.) | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES) | COORD<br>COORD<br>LOWER |
|---------|------------|-----------|----------|---|---|---------------|---------------|-------------------------|----------------------|-------------------------|
| 9/ 6/83 | ST. CLAIR  | STAG      | -        | 4.7                                     | SAND                                    | SET           | 22.1          | 1.5                     | 2500                 | 497394                  |
|         |            |           | •        |   |   | LIFT          | 21.7          | <b>o</b> .              | 1800                 | 309025                  |
|         |            |           | 7        | 4.<br>D.                                | SAND                                    | SET           | 22.1          | 9.                      | 2500                 | 497391                  |
|         |            |           | ć        |   |   | LIFT          | •             | <b>e</b> (              | 1800                 | 308036                  |
|         |            |           | 3        | 4.<br>U                                 |   | - 25          | •             | 9.0                     | 3699                 | 497386                  |
|         |            |           | 4        | •                                       | CAAD                                    | - 15          | 21.6          | m #                     | 1899                 | 309027                  |
|         |            |           | •        |   |   | LIFT          | 21.7          | 9.0                     | 2000                 | 309033                  |
|         |            | FAWN      | 1        | 3.2                                     | SILT & CLAY                             | SET           | 22.9          | 7.0                     | 3500                 | 49827                   |
|         |            |           |          |   | •                                       | LIFT          |               |                         | 900E                 | 309593                  |
|         |            |           | 8        | 3.2                                     | SILT & CLAY                             | SET           |               | 0.7                     | 3200                 | 498271                  |
|         |            |           |          |   |   | LIFT          |               | 6.0                     | 3388                 | 309593                  |
|         |            |           | ო        | 3.1<br>1.                               | SILT & CLAY                             | SET           | 23.3          |                         | 4399                 | 498279                  |
|         |            |           | •        |   | •                                       | LIFT          | •             | 6.<br>O                 | 3800                 | 309612                  |
|         |            |           | 4        | 4.<br>6                                 | SILT & CLAY                             | SET           | 23.3          | 9.0                     | 4399                 | 498679                  |
|         |            | 1         |          | 1 | 1 |               | 22.4          | 0.1                     | 2000                 | 308612                  |
|         |            | RUSSELL   | -        | 4.2                                     | SAND                                    | SET           | 22.2          | 0.3                     | 1899                 | 498662                  |
|         |            |           | ı        |   |   | LIFT          | •             |                         | 3999                 | 309964                  |
|         |            |           | ~        | 5.1                                     | SAND                                    | SET           | 22.2          | o.<br>9                 | 1899                 | 498666                  |
|         |            |           | ď        | (                                       | •                                       | LIFT          | 22.4          | <b>.</b>                | 9888                 | 309961                  |
|         |            |           | 7        | 0                                       | SIL! G CLAT                             | 111           | 22.3          |                         | D (0)                | 48666                   |
|         |            |           | •        | •                                       | V4 17 9 7 17 2                          |               | 4.00          | ÷ •                     | 000                  | 0/8805                  |
|         |            |           | •        |   | 5                                       | LIFT          | 22.4          | . e.                    | 4500                 | 309974                  |
|         |            |           |          | ı                                       | 4 18616                                 |               |               |                         | 0040                 |                         |
|         | DE INOTE   | פבררב     | -        | <b>.</b>                                | KUDDLE                                  | 35.1<br>1.1FT | 2. C.C.       |                         | 2500                 | 342783                  |
|         | ,          |           | 0        | R.                                      | RIIRRI F                                | SFT           |               |                         | 2500                 | 49997                   |
|         |            |           | ı        | !                                       |   | LIFT          |               |                         | 2500                 | 312784                  |
|         |            |           | <b>6</b> | 3.6                                     | SILT & CLAY                             | SET           | 23.1          |                         | 3899                 | 499991                  |
| -       |            |           |          |   |   | LIFT          | 23.0          |                         | 2500                 | 312839                  |
|         |            |           | 4        | თ<br>დ                                  | SILT & CLAY                             | SET           | 23.1          | 0 C                     | 3899<br>2500         | 499993                  |
|         |            |           |          |   | ١.                                      |               |               |                         | 0000                 |                         |
|         |            | HENSEL IN | -        | <b>0</b>                                | SILI & CLAT                             | 36.           | 9.00          |                         |                      | 289000                  |
|         |            |           | •        | 6                                       | >                                       | - 112         | 5 6           | - u                     | 2006                 | 314004                  |
|         |            |           | ٧        | N .                                     | 5                                       | LIFT          |               |                         | 3800                 | 314086                  |
|         |            |           | e        | 4.1                                     | SILT & CLAY                             | SET           |               |                         | 3800                 | 500713                  |
|         |            |           |          |   |   | LIFT          | 23.1          | 0.3                     | 3600                 | 314081                  |
|         |            |           | 4        | 3.8                                     | SILT & CLAY                             | SET           |               | 0.5                     | 3300                 | 500710                  |
|         |            |           |          |   |   | 1111          | 23.2          | er.                     | 000                  | 314087                  |

| AND<br>TO |
|-----------|
|-----------|

| HOUPNET STATION PHYSICAL DATE RIVER | RIVER     | LOCATION | STA. | DEPTH<br>(FT.)  | BOTTOM<br>TYPE | NET         | TEMP.<br>(C.) | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES) | COORD.<br>(UPPER/<br>LOWER) |
|-------------------------------------|-----------|----------|------|-----------------|----------------|-------------|---------------|-------------------------|----------------------|-----------------------------|
| 10/ 4/83                            | ST. CLAIR | STAG     | -    | 5.1             | SAND           | SET         | 18.0          | 80                      | 589                  | 497399                      |
|                                     |           |          | ·    | a               | CAND           | LIFT        | <b>8</b> 9    | <del>-</del> -          | 84 6                 | 309034                      |
|                                     |           |          | ٧    |                 | O THE          | LIFT        |               | 4                       | 0. 4.<br>0. 60       | 309027                      |
|                                     |           |          | ო    | 4.2             | SAND           | SET         |               | 0.8                     | 330                  | 497400                      |
|                                     |           |          |      |                 |                | LIFT        |               | 0.1                     | 28                   | 309033                      |
|                                     |           |          | 4    | <b>4</b><br>0   | SAND           | SET<br>LIFT | 0.8<br>0.0    | 00.7                    | 330<br>58            | 497413<br>309048            |
|                                     |           | FAK      | -    |                 | SILT & CLAY    | SFT         | 18.5          | 4 0                     | 680                  | 498267                      |
|                                     |           |          | •    | )               | •              | 1 161       | , œ           | , r                     | 139                  | 20058                       |
|                                     |           |          | ~    | 0.0             | SILT & CLAY    | SET         |               | . o                     | 089                  | 498269                      |
|                                     |           |          |      |                 |                | LIFT        |               | 0.7                     | 739                  | 309590                      |
|                                     |           |          | ო    | ٦.<br>ص         | SILT & CLAY    | SET         | 18.5          | 7.0                     | 230                  | 498288                      |
|                                     |           |          | •    | ,               | •              | LIFT        | 18.0          | 9.0                     | 169                  | 309623                      |
|                                     |           |          | 4    | 6.<br>4.        | SILI & CLAY    | SET         |               | . o                     | 230                  | 498286                      |
|                                     |           | 1 1 1 1  | 1    | 1 1 1 1 1 1 1 1 |                |             |               |                         | 80                   | 30905                       |
|                                     |           |          | -    | 9.4             | SILT & CLAY    | SET         | 18.5          |                         | 460                  | 499981                      |
|                                     |           |          |      |                 |                | LIFT        |               | 6.0                     | 539                  | 312804                      |
|                                     |           |          | 7    | 4<br>6.         | SILT & CLAY    | SET         | 18.5          | 0.5                     | 460                  | 498981                      |
|                                     |           |          | •    |                 |                | LIFT        | 9.0           | e. 0                    | 539                  | 312806                      |
|                                     |           |          | יי   | ص               | SAND           | SET         | E 6           | ~ (                     | 530                  | 498666                      |
|                                     |           |          | 4    | 6               | SAND           | - T17-      | 5 &<br>5 &    | - c                     | 9. F.                | 49863                       |
|                                     |           |          |      | •               | !              | LIFT        | 18.0          | 0.7                     | 730                  | 309964                      |
|                                     | DETROIT   | BELLE    | -    | 5.5             | RUBBLE         | SET         | . 8.5         | 1.0                     | 2300                 | 499968                      |
|                                     |           |          |      |                 |                | LIFT        | 18.0          | 0.4                     | 200                  | 312782                      |
|                                     |           |          | 8    | ภ<br>.ช         | RUBBLE         | SET         | 18.5          | 4.0                     | 2300                 | 499971                      |
|                                     |           |          | ,    |                 | •              | LIFT        | 18.0          | 4.0                     | 200                  | 312784                      |
|                                     |           |          | 7)   | 4<br>O          | SILI & CLAT    | 75.         | 5 th          | 9 0                     | 2399                 | 48866                       |
|                                     |           |          | 4    | 4               | STITECAN       | 7 7 7 7     |               | 9 0                     | 2300                 | 400003                      |
|                                     |           |          | ,    |                 | <b>3</b>       | LIFT        | 18.5          | 9.0                     | 450                  | 312840                      |
|                                     |           | HENNEDIN | -    | 5.0             | SILT & CLAY    | SET         | 18.0          | 0.4                     | 130                  | 500676                      |
|                                     |           |          |      |                 |                | LIFT        | 18.0          | 0.3                     | 3000                 | 814066                      |
|                                     |           |          | 7    | 5<br>0          | SILT & CLAY    | SET         | 18.0          | 4.0                     | 130                  | 500678                      |
|                                     |           |          | ,    | ,               | •              | LIFT        | 6.0           | e. 0                    | 3000                 | 814066                      |
|                                     |           |          | 70   | o.e             | SILI & CLAY    | ) TET       | 2 4           | O C                     | OSE<br>C             | 500710                      |
|                                     |           |          | 4    | 0.5             | SILT & CLAY    | SET         | , <b>6</b>    | 0.0                     | 350                  | 500710                      |
|                                     |           |          |      | )<br>)          | •              | LIFT        | 18.0          |                         | 2800                 | 814081                      |

| 319 500987<br>3500 314232            |             |          |             |
|--------------------------------------|-------------|----------|-------------|
| <br>                                 | 99          | - 4      | - 4         |
| 0.0<br>4.6                           | 0 0<br>4 6  | ÷ ÷      | + +<br>R (4 |
| 0.61                                 | 0.81<br>0.0 | 0.61     | 0.0         |
| SET                                  | SET         | SET      | SET         |
| STONY 1 3.6 SILT & CLAY SET 19.0 0.4 | SILT & CLAY | RUBBLE   | RUBBLE      |
| 3.6                                  | 3.3         | ان<br>1. | 4.6         |
| -                                    | 8           | ၈        | 4           |
| STONY                                |             |          |             |
| 10/ 4/83 DETROIT                     |             |          |             |
| 10/ 4/83                             |             |          |             |

| DATE    | DATE RIVER                              | LOCATION | STA.<br>NO. | DEPTH<br>(FT.) | BOTTOM<br>TYPE                          | NE 1 | TEMP.<br>(C.)    | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES) | COORD.<br>(UPPER/<br>LOWER) |
|---------|---|----------|-------------|----------------|---|------|------------------|-------------------------|----------------------|-----------------------------|
| 5/21/84 | ST. CLAIR                               | STAG     | -           | 5.0            | SAND                                    | SET  | 0.0              | 6.                      | 4000                 | 0                           |
|         |   |          | 8           | 5.0            | SAND                                    | SET  | )<br>)<br>)<br>) | 7 0.                    | 4000                 | 00                          |
|         |   |          | 1           |                |   | LIFT | 0.6              | 4                       | 1399                 | 0                           |
|         |   |          | က           | n              | SAND                                    | SET  | တ<br>တ<br>ပ      | O (                     | 4000                 | 0 (                         |
|         |   |          | 4           | 5.<br>5.       | SAND                                    | SET  | ກ ດ<br>ກ ດ       | 0<br>0<br>4. 10         | 0.00<br>0.00         | 00                          |
|         |   |          |             |                |   | LIFT | 9.5              | 4.0                     | 650                  | 0                           |
|         |   | FAWN     | -           | 0.4            | SAND                                    | SET  | 0.6              | 1.7                     | 4000                 | 0                           |
|         |   |          |             |                |   | LIFT | <b>9</b>         | 0.7                     | 2800                 | 0                           |
|         |   |          | 6           | 4.0            | SAND                                    | SET  | 0.6              | 1.7                     | 4000                 | 0                           |
|         |   |          | ć           | Ċ              |   | רודן | တ<br>က (         | ٥. ٢                    | 2800                 | 0 (                         |
|         |   |          | D           |                | SAND                                    | 151  | ر<br>د<br>د      | - C                     | 4000                 | 00                          |
|         |   |          | 4           | 3,0            | SAND                                    | SET  | )<br>0           | -                       | 8 6                  | òc                          |
|         |   |          |             | )              |   | LIFT | 0.0              | 0.4                     | 1800                 | 0                           |
|         |   | RUSSELL  |             | 4.0            | SAND                                    | SFT  | 6                | o +                     | 4899                 |                             |
|         |   |          |             | •              | <u> </u>                                | LIFT | 10.01            |                         | 6666                 | C                           |
|         |   |          | 8           | 0.4            | SAND                                    | SET  |                  | <br>-                   | 4899                 | 0                           |
|         |   |          |             |                |   | LIFT | 10.0             | <del>1</del> .5         | 3399                 | 0                           |
|         |   |          | က           | <b>0</b> .0    | SAND                                    | SET  | 9.5              | <b>4</b> .8             | 000                  | 0                           |
|         |   |          |             | ,              |   | LIFT | 10.0             | <del>.</del> 8          | 3399                 | 0                           |
|         |   |          | 4           | O.<br>9        | SAND                                    | SET  | و<br>د<br>د      | <del>.</del> .          | 000                  | 0 (                         |
|         | 1 | 1        | 1           | 1              |   | 1111 | 10.0             | F. 68                   | 3399                 | 0                           |
|         | DETROIT                                 | BELLE    |             | 0.4            | SILT & CLAY                             | SET  | 12.0             | . 0.0                   | 2600                 | 0                           |
|         |   |          |             |                |   | LIFT | 12.0             | 4.0                     | 33C                  | 0                           |
|         |   |          | ~           | 4.0            | SILT & CLAY                             | SET  | 12.0             | 0.0                     | 2600                 | 0                           |
|         |   |          |             |                |   | LIFT | 12.0             | <b>9</b> .              | 3300                 | 0                           |
|         |   |          | က           | 0.9            | RUBBLE                                  | SET  | ;<br>            | <del>+</del> (          | 2800                 | 0 (                         |
|         |   |          | •           | (              |   | - 11 | 12.0             |                         | 3800                 | 0 (                         |
|         |   |          | 4           | 0.9            | RUBBLE                                  | SET  | <br>             | - 0                     | 2800<br>2800         | 00                          |
|         |   | 1        | 1           |                | 1 |      | 7.0              | 0.2                     | 3800                 | 2                           |
|         |   | HENNEPIN | -           | 5.0            | RUBBLE                                  | SET  |                  | 0.7                     | 3800                 | 0                           |
|         |   |          | ,           | 1              |   | LIFT | 12.5             | 10 i                    | 2600                 | 0                           |
|         |   |          | 7           | 9.0<br>0       | RUBBLE                                  | SET  |                  | - <b>u</b>              | 9800                 | 00                          |
|         |   |          | 6           | 5.0            | SILT & CLAY                             | SET  | 12.5             | 9.0                     | 4000                 | 0                           |
|         |   |          |             |                |   | LIFT | •                | <b>8</b> 9.0            | 2800                 | 0                           |
|         |   |          | 4           | 5.0            | SILT & CLAY                             | SET  | 12.5             | 9.0                     | 4000                 | 0                           |
|         |   |          |             |                |   | LIFT |                  |                         | 2800                 | 0                           |

| 00                 | 0      | 0       | 0           | 0            | 0                 | 0    |
|--------------------|--------|---------|-------------|--------------|-------------------|------|
| 4 4<br>0004<br>000 | 4000   | 4000    | 4000        | <b>4</b> 000 | 4000              | 4000 |
| - <del>-</del>     | 1.7    | თ.<br>— | ÷.          | 2.1          | <del>-</del><br>ئ | 2.1  |
| 12.5               | 12.5   | 12.0    | 12.5        | 12.5         | 12.5              | 12.5 |
| SET<br>LIFT        | SET    | LIFT    | SET         | LIFT         | SET               | LIFT |
| RUBBLE             | RUBBLE |         | SILT & CLAY |              | SILT & CLAY       |      |
| 0.<br><b>9</b>     | 0.9    |         | <b>4</b> .0 |              | 0.4               |      |
| -                  | 8      |         | Ю.          |              | 4                 |      |
| STONY              |        |         |             |              |                   |      |
| 1/21/84 DETROIT    |        |         |             |              |                   |      |
| 5/21/84            |        |         |             |              |                   |      |

| A  | DATE    | RIVER     | LOCATION | STA. | DEPTH<br>(FT.) | BOTTOM<br>TYPE | NET         | TEMP.<br>(C.) | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES)  | COORD.<br>(UPPER/<br>LOWER) |
|--|---------|-----------|----------|------|----------------|----------------|-------------|---------------|-------------------------|-----------------------|-----------------------------|
| SAND   LIFT   11.0   1.1   1800  | 6/12/84 | ST. CLAIR | STAG     | -    |                | SAND           | SET         | 11.5          | 6.1                     | 3000                  | 0                           |
| FANN   1   3.0   SAND   LIFT   11.0   0.1   1389   |         |           |          | 0    | 4              | GNAS           | LIFT<br>SFT | = =<br>0 =    | - o                     | 000                   | 00                          |
| The color of the   |         |           |          | ı    | •<br>:         |                | LIFT        |               | -                       | 5<br>0<br>0<br>0<br>0 | 0                           |
| FAWN 1 3.0 SAND LIFT 11.0 0.0 13399  FAWN 1 3.0 SAND LIFT 11.0 0.0 13399  2 3.0 SAND SET 12.0 1.6 4500  3 3.0 SAND SET 12.0 1.4 40000  3 3.0 SAND LIFT 11.5 1.1 4500  2 4.0 SAND SET 12.0 1.1 4500  3 3.0 SAND SET 12.0 1.1 3199  RUSSELL 1 4.0 SAND LIFT 11.5 1.1 3199  RUSSELL 1 5.0 SAND SET 12.0 1.1 3199  BELLE 1 5.0 RUBBLE SET 12.0 1.3 3600  4 3.0 SAND LIFT 12.0 1.3 3600  4 3.0 SAND SET 12.0 1.3 3600  4 3.0 SAND SET 12.0 1.3 3600  4 4.0 SAND SET 12.0 1.3 3600  HENNEPIN 1 5.5 SILT & CLAY SET 18.0 0.3 43999  HENNEPIN 1 5.5 SILT & CLAY SET 18.0 0.3 4000  2 5.4 SILT & CLAY SET 18.0 0.3 4000  4 5.7 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000  5 5.8 SILT & CLAY SET 18.0 0.3 4000   |         |           |          | е    | 4.0            | SAND           | SET         | 12.0          | 4.0                     | 3388                  | 0                           |
| FAWN 1 3.0 SAND SET 12.0 1.6 4500  2 3.0 SAND SET 12.0 1.6 4500  3 3.0 SAND SET 12.0 1.6 4500  4 3.0 SAND LIFT 11.5 1.1 4500  RUSSELL 1 4.0 SAND LIFT 11.5 1.1 4500  2 4.0 SAND LIFT 12.0 1.1 4500  3 3.0 SAND LIFT 12.0 1.5 35600  4 3.0 SAND LIFT 12.0 1.5 35600  BELLE 1 5.0 SAND LIFT 12.0 1.8 4500  BELLE 1 5.0 RUBBLE SET 18.0 0.3 1599  HENNEPIN 1 5.5 SILT & CLAY SET 18.5 0.2 36690  HENNEPIN 1 5.5 SILT & CLAY SET 18.5 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.5 0.3 4000  4 5.7 SILT & CLAY SET 18.5 0.2 36690  5 5.4 SILT & CLAY SET 18.5 0.2 36690  6 4000  6 5.7 SILT & CLAY SET 18.5 0.2 36690  7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7  |         |           |          | •    | •              | 944            | LIFT        |               | 0.0                     | 1399                  | 0                           |
| FAWN         1         3.0         SAND         SET         12.0         1.6         4500           2         3.0         SAND         SET         12.0         1.6         4500           3         3.0         SAND         LIFT         11.5         1.4         4000           3         3.0         SAND         LIFT         11.5         1.1         4500           BELLE         1         4.0         SAND         LIFT         11.5         1.1         3189           RUSSELL         1         4.0         SAND         LIFT         12.0         1.1         3189           RUSSELL         1         4.0         SAND         LIFT         12.0         1.5         3600           3         3.0         SAND         LIFT         12.0         1.7         3600           4         3.0         SAND         LIFT         12.0         1.7         3600           8ELLE         1         5.0         RUBBLE         SET         18.0         0.3         1499           4         3.0         SAND         LIFT         12.0         1.7         3600           4         3.0         RUBBLE   |         |           |          | •    | )<br>•         |                | LIFT        |               | 0.0                     | 1399                  | 00                          |
| The color of the   |         |           | FAWN     | -    |                | SAND           | SET         |               | 1.6                     | 4500                  | 0                           |
| SAND   SET 12.0   1.6   4500   |         |           |          |      |                |                | LIFT        | •             | 4.                      | 4000                  | 0                           |
| BELLE 1 5.0 SAND LIFT 11.5 11.4 4500  RUSSELL 1 4.0 SAND LIFT 12.0 1.5 3189  RUSSELL 1 4.0 SAND SET 12.0 1.5 35600  A 3.0 SAND LIFT 12.0 2.1 4500  BELLE 1 5.0 SAND LIFT 12.0 2.1 4500  BELLE 1 5.0 RUBBLE SET 12.0 1.7 3600  LIFT 12.0 1.7 3600  LIFT 12.0 1.5 3600  LIFT 12.0 2.1 4500  BELLE 1 5.0 RUBBLE SET 12.0 1.7 3600  HENNEPIN 1 5.0 SILT & CLAY SET 18.0 0.3 1839  HENNEPIN 1 5.5 SILT & CLAY SET 18.0 0.3 4399  LIFT 17.9 0.3 4399  LIFT 17.9 0.3 4399  HENNEPIN 1 5.5 SILT & CLAY SET 18.0 0.3 3699  S 5.4 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 3699  S 5.8 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  LIFT 19.5 0.6 4000   |         |           |          | 7    | 3.0            | SAND           | SET         | •             | 9.1                     | 4500                  | 0                           |
| RUSSELL 1 4 0 SAND LIFT 11:5 1:1 3199  RUSSELL 1 4 0 SAND SET 12:0 1:5 3189  RUSSELL 1 4 0 SAND SET 12:0 1:5 3600  4 3.0 SAND LIFT 12:0 2.1 4500  4 3.0 SAND LIFT 12:0 1:7 3600  BELLE 1 5.0 RUBBLE SET 12:0 1:7 3600  BELLE 1 5.0 RUBBLE SET 18:0 0.3 1899  3 4.0 SILT & CLAY SET 18:0 0.3 4399  HENNEPIN 1 5.5 SILT & CLAY SET 18:0 0.3 3699  2 5.4 SILT & CLAY SET 18:0 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18:0 0.3 3699  3 5.8 SILT & CLAY SET 18:0 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY |         |           |          | •    | 6              | CAND           | 111         | •             | 4                       | 9 4                   | 00                          |
| RUSSELL 1 4.0 SAND SET 12.0 1.5 3189  RUSSELL 1 4.0 SAND SET 12.0 1.5 3600  2 4.0 SAND LIFT 12.0 2.1 4500  3 3.0 SAND LIFT 12.0 2.1 4500  LIFT 12.0 1.7 3600  HENNEPIN 1 5.0 RUBBLE SET 18.0 0.3 1989  3 4.0 SILT & CLAY SET 18.0 0.3 4399  HENNEPIN 1 5.5 SILT & CLAY SET 18.0 0.3 3699  2 5.4 SILT & CLAY SET 18.9 0.3 3699  2 5.4 SILT & CLAY SET 18.9 0.3 3699  3 5.8 SILT & CLAY SET 18.9 0.3 4000  4 5.7 SILT & CLAY SET 18.9 0.3 4000  4 5.7 SILT & CLAY SET 18.9 0.3 4000  |         |           |          | ,    | ?              |                | LIFT        |               |                         | 3189                  | 0                           |
| RUSSELL 1 4.0 SAND SET 12.0 1.5 3600  2 4.0 SAND LIFT 12.0 2.1 4500  3 3.0 SAND LIFT 12.0 1.5 3600  4 3.0 SAND LIFT 12.0 1.7 3600  LIFT 12.0 1.8 4000  BELLE 1 5.0 RUBBLE SET 18.0 0.3 1899 31277  2 5.0 RUBBLE SET 18.0 0.3 1899 31277  4 4 0 SILT & CLAY SET 18.0 0.3 3699  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 3699  HENNEPIN 1 5.5 SILT & CLAY SET 18.9 0.3 3699  3 5.8 SILT & CLAY SET 18.9 0.3 3699  4 5.7 SILT & CLAY SET 18.9 0.5 4100   |         |           |          | 4    | 3.0            | SAND           | SET         |               | 7.                      | 4500                  | 0                           |
| RUSSELL 1 4.0 SAND SET 12.0 1.5 3600  2 4.0 SAND LIFT 12.0 2.1 4500  3 3.0 SAND SET 12.0 1.5 3600  4 3.0 SAND SET 12.0 1.7 3600  LIFT 12.0 1.7 3600  LIFT 12.0 1.7 3600  LIFT 12.0 1.7 3600  LIFT 12.0 1.8 4000  LIFT 12.0 1.8 4000  LIFT 12.0 1.8 4000  LIFT 12.0 1.8 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 3699  3 5.8 SILT & CLAY SET 18.8 0.3 3699  3 5.8 SILT & CLAY SET 18.8 0.3 3699  4 5.7 SILT & CLAY SET 18.8 0.3 3699  3 5.8 SILT & CLAY SET 18.8 0.3 3699  4 5.7 SILT & CLAY SET 18.8 0.3 3699  4 5.7 SILT & CLAY SET 18.8 0.3 3699  5 5.4 SILT & CLAY SET 18.8 0.3 3699  6 4100   |         |           |          |      |                |                | LIFT        | •             | 7.7                     | 3189                  | 0                           |
| SAND   SET   12.0   1.5   3600   1.5   3600   1.5   3600   1.5   3600   1.5   3600   1.5   3600   1.5   3600   1.5   3600   3.0      |         |           | RUSSELL  | -    |                | SAND           | SET         |               | E                       | 3600                  | 0                           |
| 2 4.0 SAND SET 12.0 1.5 3600  3 3.0 SAND LIFT 12.0 1.7 3600  4 3.0 SAND LIFT 12.0 1.7 3600  LIFT 12.0 1.8 4000  BELLE 1 5.0 RUBBLE SET 18.0 0.3 1899 31277  2 5.0 RUBBLE SET 18.0 0.3 1899 48989  3 4.0 SILT & CLAY SET 18.0 0.3 4399 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 3699  2 5.4 SILT & CLAY SET 18.8 0.3 3699  3 5.8 SILT & CLAY SET 18.9 0.3 3699  3 5.8 SILT & CLAY SET 18.9 0.3 3699  4 5.7 SILT & CLAY SET 18.9 0.5 4100   |         |           |          |      |                |                | LIFT        |               | 2.1                     | 4500                  | 0                           |
| BELLE 1 5.0 SAND LIFT 12.0 2.1 4500  4 3.0 SAND LIFT 12.0 1.8 4000  BELLE 1 5.0 RUBBLE SET 18.0 0.3 1000 49996  3 4.0 SILT & CLAY SET 18.0 0.3 4399  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 3699  3 5.8 SILT & CLAY SET 18.9 0.3 4000  4 5.7 SILT & CLAY SET 18.9 0.3 4000  4 5.7 SILT & CLAY SET 18.9 0.3 4000  4 5.7 SILT & CLAY SET 18.9 0.3 4000  4 5.7 SILT & CLAY SET 18.9 0.5 4100   |         |           |          | ~    |                | SAND           | SET         | 12.0          | ٠.<br>ن                 | 3600                  | 0                           |
| BELLE 1 5.0 SAND SET 12.0 1.7 3600  4 3.0 SAND LIFT 12.0 1.7 3600  LIFT 12.0 1.7 3600  LIFT 12.0 1.7 3600  LIFT 12.0 1.8 4000  2 5.0 RUBBLE SET 18.0 0.3 1899 31277  2 5.0 RUBBLE SET 18.0 0.3 1899 31277  4 4 0 SILT & CLAY SET 18.0 0.3 4399 43999  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 3699  2 5.4 SILT & CLAY SET 18.8 0.3 3699  3 5.8 SILT & CLAY SET 18.9 0.5 4100  4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          | •    | (              |                | LIFT        |               |                         | 4500                  | 0 (                         |
| BELLE 1 5.0 RUBBLE SET 12.0 1.7 3600 LIFT 12.0 1.8 4000 LIFT 12.0 1.8 4000 LIFT 17.9 0.3 1899 31277 2 5.0 RUBBLE SET 18.0 0.3 1899 31277 2 5.0 RUBBLE LIFT 17.9 0.3 1899 31277 4 4.0 SILT & CLAY SET 18.0 0.2 1000 31283 HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000 LIFT 19.5 0.2 3699 3 5.8 SILT & CLAY SET 18.9 0.5 4100 4 5.7 SILT & CLAY SET 18.9 0.5 4100   |         |           |          | מ    | ري<br>ح        | SANO           | LIFT        |               | · «                     | 900                   | 90                          |
| BELLE 1 5.0 RUBBLE SET 18.0 0.3 1000 49996  2 5.0 RUBBLE SET 18.0 0.3 1899 31277  2 5.0 RUBBLE SET 18.0 0.3 1899 31277  4 4.0 SILT & CLAY SET 18.0 0.3 4399 49999  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  2 5.4 SILT & CLAY SET 18.8 0.3 4000  2 5.4 SILT & CLAY SET 18.8 0.3 3699  3 5.8 SILT & CLAY SET 18.9 0.5 4100  4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          | 4    | 3,0            | SAND           | SET         | 12.0          | 7.1                     | 3600                  | 0                           |
| BELLE 1 5.0 RUBBLE SET 18.0 0.3 1000 49996  2 5.0 RUBBLE SET 18.0 0.3 1899 31277  2 5.0 RUBBLE SET 18.0 0.3 1899 49999  3 4.0 SILT & CLAY SET 18.0 0.2 1000 31283  HENNEPIN 1 5.5 SILT & CLAY SET 18.8 0.3 4000  2 5.4 SILT & CLAY SET 18.8 0.3 4000  2 5.4 SILT & CLAY SET 18.9 0.2 3699  3 5.8 SILT & CLAY SET 18.9 0.5 4100  4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         | ,         |          | i    |                | ,              | LIFT        | 12.0          |                         | 4000                  | -                           |
| 2 5.0 RUBBLE SET 18.0 0.3 1899 31277 3 4.0 SILT & CLAY SET 18.0 0.3 4399 4 4.0 SILT & CLAY SET 18.0 0.3 4399 1 5.5 SILT & CLAY SET 18.0 0.3 4399 2 5.4 SILT & CLAY SET 18.8 0.3 4600 3 5.8 SILT & CLAY SET 18.9 0.3 4600 4 5.7 SILT & CLAY SET 18.9 0.5 4100   |         | DETROIT   | •        | -    | 5.0            | RUBBLE         | SET         |               | 0.3                     | 1000                  | 499968                      |
| 2 5.0 RUBBLE SET 18.0 0.3 1000 3 4.0 SILT & CLAY SET 18.0 0.3 49999 4 4.0 SILT & CLAY SET 18.0 0.2 1000 31283 4 4.0 SILT & CLAY SET 18.8 0.3 4000 1 5.5 SILT & CLAY SET 18.8 0.3 3699 2 5.4 SILT & CLAY SET 18.9 0.5 4100 4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          |      |                |                | LIFT        | 17.9          | 0.3                     | 1899                  | 312778                      |
| 3 4.0 SILT & CLAY SET 18.0 0.3 4399 48999 4 4.0 SILT & CLAY SET 18.0 0.2 1000 31283 1 5.5 SILT & CLAY SET 18.8 0.3 4000 2 5.4 SILT & CLAY SET 18.8 0.3 3699 3 5.8 SILT & CLAY SET 18.9 0.5 4100 4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          | 7    | <b>S</b> .0    | RUBBLE         | SET         | <b>8</b> 1    | 0.0                     | 000                   | 00                          |
| 4 4.0 SILT & CLAY SET 18.0 0.3 4399 12833 1 5.5 SILT & CLAY SET 18.8 0.3 3699 2 5.4 SILT & CLAY SET 18.9 0.5 4100 4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         | •         |          | c    | •              | •              |             | )<br>(        |                         | 800                   | 20000                       |
| 4 4.0 SILT & CLAY SET 18.0 0.3 4399 1 5.5 SILT & CLAY SET 18.8 0.3 4000 2 5.4 SILT & CLAY SET 18.8 0.3 3699 3 5.8 SILT & CLAY SET 18.9 0.5 4100 4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          | ,    | •              | 5              | 1161        | 2 5           | , c                     | 1000                  | 3128384                     |
| 1 5.5 SILT & CLAY SET 18.8 0.3 4000 2 5.4 SILT & CLAY SET 18.8 0.2 3699 3 5.8 SILT & CLAY SET 18.9 0.5 4100 4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          | 4    |                | •5             | SET         | 18.0          | i e.                    | 4399                  | 0                           |
| 1 5.5 SILT & CLAY SET 18.8 0.3 4000 2 5.4 SILT & CLAY SET 18.8 0.3 4000 3 5.8 SILT & CLAY SET 18.5 0.2 3699 4 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          |      |                |                | LIFT        | 17.9          | 0.2                     | 1000                  | 0                           |
| 5.4 SILT & CLAY  |         |           | HENNEPIN | -    |                | -              | SET         |               | 0.3                     | 4000                  | 0                           |
| 5.8 SILT & CLAY SET 19.5 0.2 3699<br>5.8 SILT & CLAY SET 19.5 0.6 4000<br>5.7 SILT & CLAY SET 19.5 0.5 4100  |         |           |          | ,    |                | •              | LIFT        |               | 0 0                     | 3698                  | 0 (                         |
| 5.8 SILT & CLAY SET 18.9 0.5 4100<br>5.7 SILT & CLAY SET 18.9 0.5 4100   |         |           |          | ٧    | •              | 6              | SE I        | 0 5           | 200                     | 8696                  | 0                           |
| 5.7 SILT & CLAY SET 18.9 0.5 4100  |         |           |          | ဗ    | 5.<br>8        | <b>e</b> 5     | SET         | 18.9          | 0.0                     | 4100                  | 0                           |
| 5.7 SILT & CLAY SET 18.9 O.5 4100  |         |           |          |      | 1              |                | LIFT        | 19.5          | 9.0                     | 900                   | 0                           |
|  |         |           |          | 4    | 5.7            | €              | SET         | 89 S          | <b>10</b>               | 4 100                 | 01                          |

| 4300    | 2899<br>4300 | 2899<br>3199 | 3399<br>3199   |
|---------|--------------|--------------|----------------|
| £.      | ·            | - 6<br>5 4   | 0. U<br>80. 4. |
| 18.5    | 2 <b>8</b> 6 |              | . 8.<br>6. 8.  |
| SET     | SET          | SET          | SET            |
| RUBBLE  | RUBBLE       | RUBBLE       | RUBBLE         |
| 4<br>TÜ | 8.4          | 5.0          | 5.0            |
| -       | 8            | ო            | 4              |
| STONY   |              |              |                |
| DETROIT |              |              |                |
| 12/84   |              |              |                |

| DATE    | DATE RIVER | LOCATION              | STA.<br>NO. | DEPTH<br>(FT.) | BOTTOM<br>TYPE | NET       | TEMP. | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES)  | COORD.<br>(UPPER/<br>LOWER) |
|---------|------------|-----------------------|-------------|----------------|----------------|-----------|-------|-------------------------|-----------------------|-----------------------------|
| 7/23/84 | ST. CLAIR  | STAG                  | -           | 0.4            | SAND           | SET       |       | 5.3                     | 910                   | C                           |
|         |            |                       | 8           | 3.0            | SAND           | SET       | 0.0   | , c                     | 9 6<br>0 0            | 00                          |
|         |            |                       |             |                |                | LIFT      | 18.8  | 2.3                     | 380                   | 0                           |
|         |            |                       | <b>C</b>    | 9.<br>O        | SAND           | SET       | 19.2  | 0.3                     | 2699                  | 0                           |
|         |            |                       | 4           | 4              | CAND           | CIFT      | . o   | - 6                     | 619                   | 00                          |
|         |            |                       | r           | )<br>i         |                | LIFT      | 19.7  | , <del>-</del>          | 619                   | 00                          |
|         |            | TAK.                  | -           | 3.0            | SAND           | SET       | 19.7  | 0.6                     | 3000                  |                             |
|         |            |                       |             | )<br>:         | <b>)</b>       | LIFT      | 20.0  | 9.0                     | 838                   | 0                           |
|         |            |                       | 7           | 3.0            | SAND           | SET       | 19.7  | 9.0                     | 3000                  | 0                           |
|         |            |                       |             |                |                | LIFT      | 20.0  | 9.0<br>0                | 839                   | 0                           |
|         |            |                       | ო           | <b>4</b><br>0  | SAND           | SET       | 19.7  |                         | 4000                  | 0                           |
|         |            |                       | •           | •              |                | LIFT      | 9.0   |                         | 000                   | 0                           |
|         |            |                       | 4           | <b>4</b><br>5  | SAND           | LIFT      | 20.0  |                         | 9<br>0<br>0<br>0<br>0 | 00                          |
|         | •          | 1 1 1 1 1 1 1         |             |                |                |           |       |                         |                       | 1                           |
|         |            | RUSSELL               | -           | <b>4</b><br>0  | SAND           | SET       | 20.0  | 4.0                     | 4300                  | 0                           |
|         |            |                       | •           |                | !              | LIFT      | 9.0   | 9.0                     | <b>3.</b>             | 0                           |
|         |            |                       | 8           | <b>4</b><br>0  | SAND           | SET       | 9     | 4.0                     | 4300                  | 0                           |
|         |            |                       | •           | 1              |                | LIFT      | 50.0  | 9.0                     | 5100                  | 0 (                         |
|         |            |                       | ,           | o.             | SAND           | )         | 0.0   | - 0                     | 000                   | 0 (                         |
|         |            |                       | ٧           | 4              | CAND           | 7 1 1 2 7 | 9 6   | n <del>-</del>          | 918<br>930            | 00                          |
|         |            |                       | •           | )<br>:         |                | LIFT      | 20.0  | 6.0                     | 5100                  | 0                           |
|         | DETROIT    | BELLE                 | -           | 5.0            | SILT & CLAY    | SET       | 20.0  | 0.2                     | 4699                  | 0                           |
|         |            |                       |             |                |                | LIFT      | 25.0  | 0.5                     | 4500                  | 0                           |
|         |            |                       | 7           | 5.0            | SILT & CLAY    | SET       | 20.0  | 0.5                     | 4699                  | 0                           |
|         |            |                       |             |                |                | LIFT      | 25.0  | 0.5                     | 4500                  | 0                           |
|         |            |                       | 6           | <b>9</b> .0    | RUBBLE         | SET       | 50.0  | 8.<br>O                 | 2000                  | 0                           |
| •       |            |                       | •           | 1              |                | LIFT      | 24.2  | ۳.<br>۱                 | 2699                  | 0                           |
|         |            |                       | 4           | 0.9            | RUBBLE         | SET       | 20.0  | O                       | 2000                  | 0 (                         |
|         |            | 6<br>4<br>1<br>1<br>1 | 1           | 1              |                | - 447     | 24.2  | 9. O                    | 8892                  | 0 :                         |
|         |            | HENNEP IN             | -           | 5.0            | SILT & CLAY    | SET       | 20.0  | 0.1                     | 3000                  | 0                           |
|         |            |                       |             | ,              | •              | LIFT      | 29.0  | 0.0                     | 3500                  | 0                           |
|         |            |                       | 7           | O              | SILT & CLAY    | SE 1      | 20 kg | - 0                     | 900                   | 0 0                         |
| •       |            |                       | e           | 0.5            | SILT & CLAY    | SET       | 20.0  | ) <del>-</del>          | 00000                 | •                           |
|         |            |                       | ,           | )<br>:         | ,              | LIFT      | 25.0  | 0.0                     | 3300                  | 0                           |
|         |            |                       | 4           | 5.0            | SILT & CLAY    | SET       | 20.0  |                         | 3899                  | 0                           |
|         |            |                       |             |                |                | -<br>בו   | 22·0  | -<br>-<br>-             | 3556                  | >                           |

| 4500<br>3800 | 4500<br>3800<br>000<br>000 | 4399 | 4388<br>4388 |
|--------------|----------------------------|------|--------------|
|              |                            |      |              |
|              |                            |      |              |
| 9 6          | 9. 4                       | 2 2  | 2 2          |
| 00           | 00                         |      |              |
| 20.7         | •                          |      |              |

| SET         | SET    | SET    | SET    |
|-------------|--------|--------|--------|
| RUBBLE      | RUBBLE | RUBBLE | RUBBLE |
| 5.0         | 5.0    | 0.4    | 0.4    |
| -           | 7      | ღ      | 4      |
| <b>&gt;</b> |        |        |        |

7/23/84 DETROIT

| APPENDIX<br>HOOPNET | APPENDIX<br>Hoopnet Station Physical   | IL DA TA |        |                |                |       |               |                         |  | LORAN                                   |
|---------------------|--|----------|--------|----------------|----------------|-------|---------------|-------------------------|--|---|
| DATE                | RIVER                                  | LOCATION | STA.   | DEPTH<br>(FT.) | BOTTOM<br>TYPE | NET   | 7EMP.<br>(C.) | WATER VEL.<br>(FT./SEC) | LIGHT (FTCANDLES)  | COORD.<br>(UPPER/<br>LOWER)             |
| 9/ 4/84             | ST. CLAIR                              | STAG     | -      | 3.0            | SAND           | SET   | 22.0          | 1.7                     | 3699   | 6                                       |
|                     |  |          | ,      | 1              |                | LIFT  | 22.0          | 2.1                     | 2500   | 0                                       |
|                     |  |          | 7      | о              | SAND           | SET   | 22.0          | 1.7                     | 3699   | 0                                       |
|                     |  |          | ,      | ,              |                | LIFT  | 22.0          | <b>5</b> .7             | 2500   | 0                                       |
|                     |  |          | 3      |                | SAMO           |       | 22.0          |                         | 8600   | 0                                       |
|                     |  |          | 4      | 3.0            | SAND           | 7 1 1 | 20.0          | 0 C                     | 3600   | 00                                      |
|                     |  |          |        |                |                | LIFT  | 21.0          | 9 <b>89</b> .           | 3600   | 00                                      |
|                     |  | FAWN     | -      | 3.0            | SILT & CLAY    | SET   | 22.0          | 0.7                     | 2500   |   |
|                     |  |          |        |                |                | LIFT  |               |                         | 1300   | 0                                       |
|                     |  |          | 7      | 9.0<br>8       | SILT & CLAY    | SET   | 22.0          | 0.7                     | 2500   | 0                                       |
|                     |  |          | •      | (              | 9              | LIFT  | 22.0          | <b>6</b> .0             | 1300   | 0                                       |
|                     |  |          | ,<br>T | 0.6            | SAND           | SET   | 22.0          | 7.0                     | 4000   | 0                                       |
|                     |  |          | 4      | 0              | CAND           | LIFI  | 25.0          | a 10                    | 4500<br>000<br>000<br>000  | 0                                       |
|                     |  |          | ,      | )<br>)         |                | LIFT  | 22.0          | - <b>6</b>              | 4 4<br>5004<br>004   | o c                                     |
|                     |  |          |        |                | -              |       |               |                         |  |   |
|                     |  | KUSSELL  | -      | ۳<br>٥.        | SILI & CLAY    | SET   | 52.0          | ٠.<br>د م               | 3388   | 0                                       |
|                     |  |          | 2      | 4              | STIT & CLAY    | - 130 | 2,50          | 9 6                     | 2300   | 00                                      |
|                     |  |          |        |                | 5              | LIFT  | 200           | - If                    | 8888<br>8888<br>8888<br>8888<br>8888<br>8888<br>8888<br>8888<br>8888 | <b>o</b> c                              |
|                     |  |          | က      | 3.0            | SILT & CLAY    | SET   | 22.0          | . o.                    | 3199   | o                                       |
|                     |  |          |        |                |                | LIFT  | 22.0          | 0.0                     | 1300   | 0                                       |
|                     |  |          | 4      | 3.0            | SILT & CLAY    | SET   | 22.0          | 6.0                     | 3199   | 0                                       |
|                     | 11 11 11 11 11 11 11 11 11 11 11 11 11 | 1        |        | 1              |                | LIFT  | 22.0          | 0.1                     | 1300   | 0                                       |
|                     | DETROIT                                | BELLE    | -      | 0.9            | RUBBLE         | SET   | 21.0          | 0.1                     | 700  | 0                                       |
|                     |  |          | ,      | ,              | 1              | LIFT  |               | 0.5                     | 4300   | 0                                       |
|                     |  |          | 7      | 0.9            | RUBBLE         | SET   | -             | 0.1                     | 700  | 0                                       |
|                     | •                                      |          | ¢      |                | 24.0           | 111   |               | 0.0                     | 4300   | 0                                       |
| •                   |  |          | ,      |                |                | )E.   | 5 6           | 9 6                     | 4899   | 00                                      |
|                     |  |          | 4      | 0.             | SILT & CLAY    | SFT   |               | , C                     | 000  | <b>•</b>                                |
|                     |  |          |        | •              |                | LIFT  | -             | 0.0                     | 3698   | •                                       |
|                     |  | HENNEDIN | -      | 6.0            | SILT & CLAY    | SET   | 21.0          | 0.6                     | 500  | 0                                       |
| •                   |  |          |        |                |                | LIFT  | -             | 6.0                     | 269  | 0                                       |
|                     |  |          | 7      | <b>0</b> .0    | SILT & CLAY    | SET   | -             | 9.0                     | 200  | 0                                       |
|                     |  |          | •      | ,              | •              | LIFT  | -             | 6.0                     | 569  | 0                                       |
|                     |  |          |        | o.             | SIL! & CLAY    | SET   | 21.0          | 0.5                     | 90   | 0                                       |
|                     |  |          | 4      | 9              | STLT & CLAY    | 7 12  | 0.0           | , c                     | 9<br>0<br>0<br>0   | 00                                      |
|                     |  |          |        | )              | •              | 111   | 20.           | . 6                     | 60   | 0                                       |
|                     |  |          |        |                | :              |       |               |                         |  | !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! |

5-17

| 5 | 0 | 0 | 0 | 0  | 0  | 0 | 0 |
|---|---|---|---|----|----|---|---|
| _ | B | • | n | 10 | ĸ. | 面 | ď |
| • | - | ω | • | •  | -  | • | = |

| • | • |   | ۲. |   |   |   |   |
|---|---|---|----|---|---|---|---|
| 0 | - | 0 | -  | 0 | - | 0 | _ |

| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|
|   |   |   |   |   | • |   |   |
|   |   |   |   |   | - |   |   |
| ď | ч | N | a | n | 3 | n | N |
|   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |

| SET<br>LIFT<br>SET<br>LIFT<br>SET<br>LIFT<br>SET |  |
|--|--|
|--|--|

| RUBBLE      | RUBBLE | RUBBLE | 2 1991 0 |
|-------------|--------|--------|----------|
| <b>9</b> .0 | 6.0    | 6.0    | 9        |

| STONY |  |
|-------|--|
| ST    |  |

| APPENDIX<br>HOOPNET | APPENDIX<br>HOOPNET STATION PHYSICAL | . DA TA  |       |                    |                |         |       |                         |                      | LORAN                       |
|---------------------|--------------------------------------|----------|-------|--------------------|----------------|---------|-------|-------------------------|----------------------|-----------------------------|
| DATE                | RIVER                                | LOCATION | STA.  | <b>DEPTH</b> (FT.) | BOTTOM<br>TYPE | NET     | TEMP. | WATER VEL.<br>(FT./SEC) | LIGHT<br>(FTCANDLES) | COOKD.<br>(UPPER/<br>LOWER) |
| 10/ 2/84            | ST. CLAIR                            | į        | -     | 4.0                | SAND           | SET     | 14.0  | 1.6                     | 2600                 | 0                           |
|                     |                                      |          | ,     | (                  |                | LIFT    | •     | 0.0                     | 1199                 | 0                           |
|                     |                                      |          | ~     | 9.0                | SAND           | SET     | •     | 9.                      | 2600                 | 0                           |
|                     |                                      |          | c     | ¢                  | > 4 - C        | L1F1    | 0.4   | <del>-</del> 0          | 199                  | 0 (                         |
|                     |                                      |          | 9     | )<br>•             | אורו פינאו     | 1 7 6 7 | 2 5   |                         | <br>                 | 0                           |
|                     |                                      |          | 4     | 0.0                | SILT & CLAY    | SET     | 5.0   | າ ຕ<br>ວ 0              | 4 199                | 0                           |
|                     |                                      | 1        |       |                    |                |         | 14.0  | o.3                     | 1199                 | 0                           |
|                     |                                      | FAWN     | -     | 5.0                | SAND .         | SET     | 15.0  |                         | 4699                 | 0                           |
|                     |                                      |          |       |                    |                | LIFT    | 4.0   | 0.5                     | 3100                 | 0                           |
|                     |                                      |          | 7     | 4.0                | SAND           | SET     | 15.0  | 8.0                     | 4699                 | 0                           |
|                     |                                      |          | (     | (                  | !              | LIFT    | 0.4   | O .                     | 3100                 | 0                           |
|                     |                                      |          | m     | 0.4                | SAND           | SET     | 5.0   | O C                     | 3500                 | 0 0                         |
|                     |                                      |          | 4     | 4                  | CAND           | SET     | i f   | ) c                     | 25.5                 | <b>&gt;</b> C               |
|                     |                                      |          | r     | ?                  |                | LIFT    | 0.4   |                         | 318                  | 0                           |
|                     |                                      | RUSSELL  | -     | 5.0                | SILT & CLAY    | SET     | 15.0  | 6.0                     | 4399                 | 0                           |
|                     |                                      |          |       | •                  |                | LIFT    | 14.0  | 4                       | 5666                 | c                           |
|                     |                                      |          | 2     | 0.6                | SILT & CLAY    | SET     | 15.0  | . eq                    | 988                  |                             |
|                     |                                      |          | ı     | )                  | i              | LIFT    | 0.4   | 4.0                     | 3809                 |                             |
|                     |                                      |          | 6     | 5.0                | SILT & CLAY    | SET     | 15.0  |                         | 4 199                | 0                           |
|                     |                                      |          |       |                    |                | LIFT    | 4.0   | 1.1                     | 3199                 | 0                           |
|                     |                                      |          | 4     | 9.<br>O            | SILT & CLAY    | SET     | 15.0  | -:                      | 4 199                | 0                           |
|                     |                                      |          |       |                    |                | LIFT    | 14.0  |                         | 3199                 | 0                           |
|                     | DETROIT                              | BELLE    |       | 5.0                | RUBBLE         | SET     | 14.0  | 80.0                    | 3389                 | 0                           |
|                     |                                      |          |       |                    |                | LIFT    | 0.4   | 0.5                     | 4500                 | 0                           |
|                     |                                      |          | 7     | 5.0                | RUBBLE         | SET     | 14.0  | 8.0                     | 3339                 | 0                           |
|                     |                                      |          |       |                    |                | LIFT    | 4.0   | o.5                     | 4500                 | 0                           |
| •                   |                                      |          | က     | 9.0<br>0.0         | SILT & CLAY    | SET     | 0.4   | 0.0                     | 2500                 | 0 (                         |
|                     |                                      |          | •     | (                  | •              | 111     | 15.0  | 9.0                     | 3189                 | 0 0                         |
|                     |                                      |          | 4     | ه<br>ک             | SIL! & CLAT    | 1 1 5 7 | 4 K   | 7.0                     | 2500                 | <b>&gt;</b> C               |
|                     |                                      | 1 1 1 1  | 1 1 1 |                    | -              |         |       |                         |                      |                             |
|                     |                                      | HENNEPIN | -     | <b>5</b> .0        | SILT & CLAY    | SET     | •     | 1.0                     | 1000                 | 0                           |
|                     |                                      |          | ,     | •                  | •              | LIFT    | 0.4   | 4.0                     | 688                  | 0 (                         |
|                     |                                      |          | 0     | <b>4</b><br>0      | SILT & CLAY    | 55.1    | 0.5   | - •                     | 000                  | 0                           |
|                     |                                      |          | ŗ     | ,                  | CTIT & C. AV   | SET     | . 5   | • •                     | 004                  | o c                         |
|                     |                                      |          | ,     | ;                  | 5              | LIFT    | 4     | . o                     | 1899                 | 0                           |
|                     |                                      |          | 4     | 4.0                | SILT & CLAY    | SET     | 4.0   | 0.5                     | 1699                 | 0                           |
|                     |                                      |          |       |                    |                | LIFT    | 14.0  | 0.3                     | 1899                 | 0                           |

| 2699     | 1300         | 1300           | 1100         |
|----------|--------------|----------------|--------------|
| -        |              | - <del>-</del> | 4.2<br>.si.2 |
| 0.41     | 13.0<br>0.4. | 13.0<br>14.0   | 0.41         |
| SET      | LIFT<br>SET  | LIFT           | SET          |
| RUBBLE   | RUBBLE       | RUBBLE         | RUBBLE       |
| 3.0      | 4.0          | 4.0            | 5.0          |
| -        | 7            | ဂ              | 4            |
| STONY    |              |                |              |
| DETROJI  |              |                |              |
| 10/ 2/84 |              |                |              |